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DISTRIBUTION AGE

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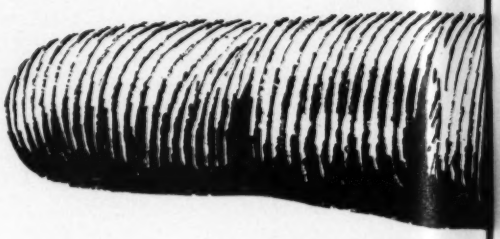

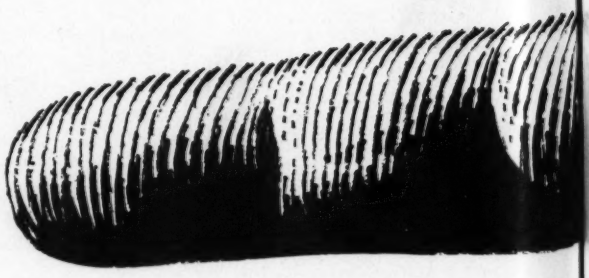

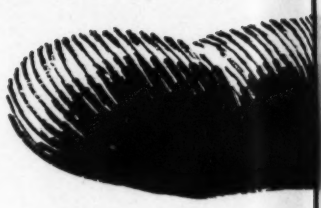

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AMERICAN AIRLINES INC.

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On the Line—

Salt and Pepper

LAST month we attended two interesting traffic and transportation conventions, one in Boston and the other in Cleveland. Yet, we left both meetings with a disturbed feeling—and there were quite a few who shared it—that the transportation segment of the two memberships outnumbered industrial traffic people. This created an imbalance of interests.

Of course, it was because both conventions placed special emphasis on transportation, naturally drawing a larger carrier-member attendance.

We first became aware of the situation in Boston. We heard several ITMs make remarks like these: "When I think of the time and money I'm spending to listen to the same old harrangue between the railroads, truckers and others, I could kick myself for coming."

"Nothing I've heard so far has any take-home value."

It was the same story in Cleveland. One remark in particular keeps repeating itself: "It's like the annual 'Transportation Night' we have at our traffic club. Here, just like there, the carriers have taken over and are running the show."

Our own impression is that there was some stuff, tripe and rehash at both meetings but, also, there was enough good to permit the honest report "interesting." The carriers did not crash the gates, nor run the show. They were invited guests.

However, what we think and what the transportation boys think is incidental—we think—to what the ITMs think. For one reason, they are equal dues-paying brothers-in-law. Most important, they are somebody's customers. Overnight, they could be somebody else's, in case you carrier boys forgot. (This is a friendly tip based on a named gripe.)

The resentment we report did not originate at the two meetings under discussion. It goes back to local club activities. Just during the past year, we heard of several cases where carrier activities in some traffic clubs created serious rifts among the membership by stressing social affairs to the neglect of educational programs.

The difficulty largely is a matter of personalities and objectives. The average industrial traffic manager is a quiet, serious, studious, hard-working guy or gal. The average carrier representative is gay, gregarious, demonstrative and dominant. Their respective jobs demand those opposite characteristics.

One is like salt, the other like pepper. In business, as well as for food, they are needed. But a little pepper, in a traffic club as on food, goes a long way.

Yakkety Yak

Education is as much a matter of search as exposure. Some who didn't like the convention fare went out on a tear; a few on a tour. We rode part way home with one of each. One got an eyeful, the other a snootful.

LESSONS: The former described IDP (See DA, July, 1955), two-way radio, and freight handling systems used by local carriers.

. . . The other was "alkalizing" every half hour. The first day he imbibed scotch and soda; next day, rye and soda; the third, bourbon and soda.

. . . He swore off soda.

HASSLE: In Cleveland, we learned some truckers are preparing to sue Ohio on constitutionality of the state's alleged discriminating axle-mile tax, and for tax payment refund from Oct. 1, 1953.

. . . Discrimination charge stems from recent Ohio Supreme Court decision exempting Michigan truckers from tax due to a 1937 reciprocity deal.

. . . The razzle dazzle now hits Illinois and West Virginia. They face reciprocity cancellation (13 states so far) unless they drop tax from pact.

. . . Illinois studies counter measure: Visitor tags for Ohio cars.

PRELUDE: House Commerce subcommittee completed hearings on Cabinet Committee's Report on September 22.

PREDICTION: Limited liberalization in 1957.

H. V. Greene Editor

END THIS SAFARI...

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MEAD board

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BOSTON 10, MASSACHUSETTS.....43 Leon Street

POKE-PAK COSTS SO LITTLE IT'S EXPENDABLE

Circle No. 4 on Card, Facing Page 53, for more information

LETTERS
TO THE EDITOR

Does Private Carriage Pay

To The Editor:

Regarding the constructive article published in the August, 1955, issue of DISTRIBUTION AGE under the by-line of Mr. James J. Walsh, Traffic Manager, The Mennen Co., Morristown, N. J., we note in Table II Mr. Walsh suggests theoretical cost figures for "ownership" (or its equivalent, full-service truck leasing). It occurs to us that it might be helpful to your readers to have the benefit of the attached Vehicle Cost Analysis sheet which incorporates all cost factors of truck ownership, whether assumed by the carrier or a lessor.

From NATIONAL TRUCK LEASING SYSTEM, INC. 23 East Jackson Boulevard, Chicago 4, Illinois

In most businesses where the operation of cars and trucks is not the primary function of the business, it is the 3rd largest item of expense. Many companies have a substantial investment in the operation of this equipment, often without realizing it. For this reason, this list of expenses is submitted as always being present in the operation of motor vehicles. If you will, from the best sources of information available, place a cost on each of the following items the result will be of extreme value in computing your vehicle operating costs under consideration.

VEHICLE COST ANALYSIS

	PER YEAR	
FIXED EXPENSE	$ $$$	¢
1. TOTAL CAPITAL INVESTMENT		
2. INTEREST ON INVESTMENT		
3. FINANCE OR CARRYING CHARGES (IF BOUGHT ON TIME)		
4. DEPRECIATION ON CARS OR TRUCKS		
5. BODY WORK INCLUDING REPAINTING AND RE-LETTERING		
6. LICENSE TAGS (STATE-CITY-CITY INSPECTIONS)		
7. PROPERTY TAXES (CITY, STATE AND COUNTY) ON ALL VEHICLES PLUS ALL EQUIPMENT USED FOR MAINTENANCE OF SAME		
8. FIRE AND THEFT INSURANCE ON CARS OR TRUCKS		
9. PUBLIC LIABILITY AND PROPERTY DAMAGE INSURANCE		
10. COLLISION INSURANCE		
11. GARAGE RENT (INCLUDES INSURANCE, TAXES, MAINTENANCE AND DEPRECIATION OF BUILDING AND EQUIPMENT IF OWNED BY THE [illegible] SERVICE ELIMINATING NEED FOR GARAGE. ESTIMATE VALUE OF GARAGE AND PARKING SPACE UTILIZED OTHERWISE)		
12. WASHING AND POLISHING, (INCLUDING SOAP, SPONGES, WAX, CHAMOIS, HOSE, ETC.)		
13. UNIFORMS, OVERALLS, RAGS AND LAUNDRY		
14. GARAGE LABOR		
15. GARAGE SUPERVISION		
16. OFFICE WORK, RECORD KEEPING, STATIONERY, OFFICE MACHINES AND SUPPLIES, MAINTENANCE OF RECORDS, PAYMENT OF MULTIPLE BILLS, CHECKING, TYPING, POSTAGE, ETC. PURPOSES		
17. ADMINISTRATIVE COST: TIME OF MANAGEMENT CONSUMED IN TRUCK SUPERVISION, HANDLING INSURANCE, INVESTIGATING ACCIDENTS, PURCHASING, INTERVIEWING SALESMEN, SCHEDULING MAINTENANCE AND OTHER DETAILS		
18. TIME LOST DUE TO DELAYS FROM LACK OF SUBSTITUTE OR EXTRA TRUCKS AT TIME OF BREAKDOWNS		
19. GARAGE AND PARKING AREA LIGHT, HEAT, WATER, TELEPHONE		
20. DEPRECIATION OF GARAGE AND SHOP EQUIPMENT INCLUDING REPLACEMENT OF LOST AND BROKEN TOOLS		
21. ROAD SERVICE FOR BREAKDOWNS, WRECKS AND TIRE REPAIRS		
22. SPECIAL EQUIPMENT (TARPAULINS, HEATERS, RADIOS, SHELVES OR RACKS) PLEASE REMEMBER IN CALCULATING TRUE COSTS CONSIDERATION MUST BE MADE OF WORKMEN'S COMPENSATION INSURANCE, GARAGE LIABILITY INSURANCE, BOND, GASOLINE, OIL AND GREASE TAXES, SOCIAL SECURITY TAXES, GROUP INSURANCE, HOSPITAL, HEALTH INSURANCE, EXTRA HELP EMPLOYED DURING TIMES OF VACATIONS OR ILLNESSES		
TOTAL FIXED COSTS		
MILEAGE EXPENSE		
23. GASOLINE PURCHASED		
24. OIL PURCHASED		
25. GREASE PURCHASED		
26. TIRE AND TUBE COST INCLUDING REPAIRS AND RECAPS		
27. REPLACEMENT AND DAMAGE REPAIR PARTS FOR VEHICLES		
28. REPAIRS DONE OUTSIDE OF COMPANY SHOPS		
29. ANTI-FREEZE AND TIRE CHAINS		
TOTAL MILEAGE COSTS		
TOTAL COST PER ANNUM—(FIXED AND MILEAGE)		

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The use of such an analytical breakdown will preclude overlooking "hidden costs" which many truck users fail to consider in making cost comparisons, even though they are very much a part of truck procurement and maintenance.

Martha N. Dunlap,
Secretary-Manager
National Truck Leasing System
Chicago, Ill.

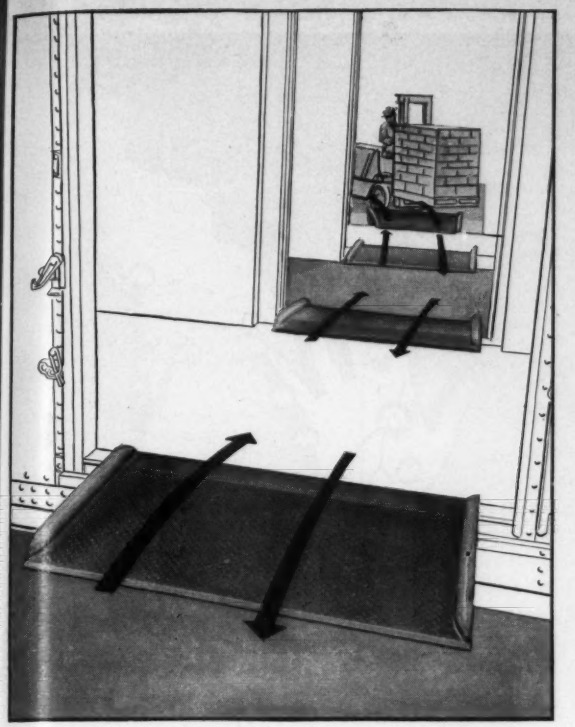
Copies of the form (see cut) are available by writing Mrs. Dunlap at the National Truck Leasing System, 23 E. Jackson Blvd., Chicago 4, Ill. —The Editor.

To The Editor:

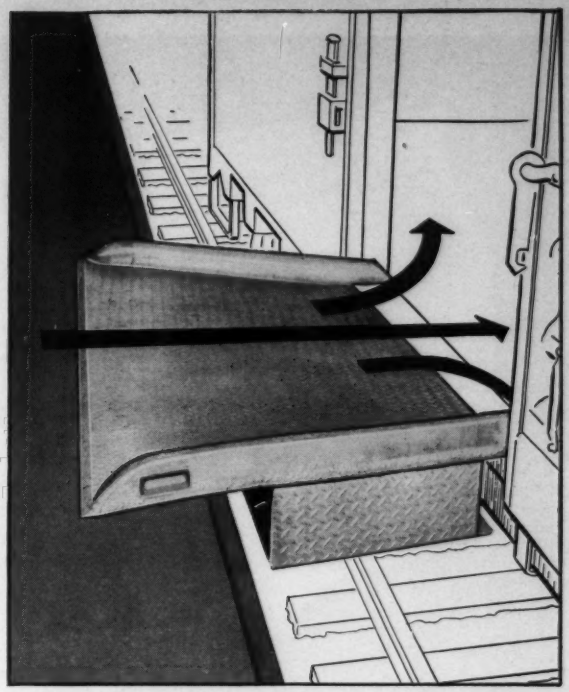
I have read with much interest your article appearing in the August issue of DISTRIBUTION AGE entitled "Does Private Carriage Pay?"

I could take issue with several statements but the one that strikes

(*Please Turn to Page* 115)



Car-to-car loading problem?



Loading flush-with-floor, flush-with-door?

Solve these loading problems with Magcoa magnesium Dockboards

Car-to-car and car-to-dock loading—This familiar problem — handling loads through one car to another or to the dock—is solved every day by Magcoa Dockboards. Rugged locking devices, not visible in the photograph, assure a snug, slip-proof fit between cars and between car and dock. Notice that the Dockboard in the far background has one straight curb and one flared curb—a special design for use *at the end of a dock which is just long enough to permit simultaneous loading of three cars:* a simple solution, suggested by an alert Magcoa representative to a customer who'd previously been able to load only two cars at a time.

Flush-with-floor, flush-with-door loading—Loading problems of this kind find quick, practical solution in the Magcoa flush Dockboard. Because the safety tread plate of the Dockboard does not rest on the car floor or threshold, loads can be spotted right to the very edge. Flush positioning at the car-end and rounded edge-beveling at the dock-end of the board assure maximum loading smoothness. Easily adjustable locking arrangement provides a snug, safe fit between dock and car. Because curb-ends do not extend beyond the car-threshold, there is maximum usable floor area for turning into and out of the car.

Light-weight, heavy-duty construction—Every Magcoa Dockboard is constructed of magnesium, the lightest of structural metals. Every Magcoa Dockboard has the patented hand holds, quarter-round safety curbs and other safety features which have made Magcoa Dockboards famous.

What's your loading problem? Are you bothered by spilling and damaging of loads? By a low rail dock? A low truck dock? A narrow, congested dock? Inefficient loading from ground level? Are you planning the dock for a new plant or warehouse? Modernizing an old dock? Switching to higher-capacity lift trucks or pallet trucks?

Whatever the loading problem, the odds are 1000 to 1 that your local Magcoa Representative has encountered it and solved it before.

Good Suggestion: Send for our free new bulletin, "What to do about Difficult Docks." It's loaded with practical, helpful ideas.

MAGNESIUM COMPANY OF AMERICA

MATERIALS HANDLING DIV.
EAST CHICAGO 3, INDIANA

Representatives in principal cities

magcoa TRADE-MARK

IN CANADA—Magcoa Limited, 277 Kipling Ave. South Toronto 14, Ontario

☐ Please send "Difficult Docks" bulletin

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Company_____

Address_____

City-Zone-State_____

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Chuting the NEWS

Coming Events

Oct. 9-14—The American Merchant Marine Conference, and the Propeller Club of the U. S., convention, joint meeting, New Orleans.
Oct. 10-12—Joint Military-Industry Symposium on Packaging and Materials Handling, Washington.
Oct. 11-12—American Short Line Railroad Assn., 42nd annual meeting, Chicago, Ill.
Oct. 11-13—National Assn. of Shippers Advisory Boards, Pittsburgh.
Oct. 12-15—10th annual convention, National Defense Transport Administration, Sheraton-Plaza Hotel, Boston, Mass.
Oct. 15-16—Delta Nu Alpha Transportation Fraternity, Inc., annual meeting, Wilmington, Del.
Oct. 15-18 — Conveyor Equipment Mfrs. Assn., annual meeting, Greenbrier, White Sulphur Springs, W. Va.
Oct. 17-18 — Mid-season meeting, Local Cartage National Conference, Hotel Statler, Washington.
Oct. 17-21—American Trucking Assn., Inc., 22nd annual convention, Statler and Mayflower Hotels, Washington, D. C.
Oct. 17-21—43rd National Safety Congress and Exposition, Chicago.
Oct. 18—The Material Handling Institute's Traveling Clinic, Cleveland, Ohio.
Oct. 18-19—Eastern Industrial Traffic League, Washington, D. C.
Oct. 19—The Material Handling Institute's Traveling Clinic, Louisville.
Oct. 24-26—Sixth National Conference on Standards, Sheraton-Park Hotel, Washington, D. C.
Oct. 24-27—National Assn. of Railroad and Utilities Commissioners, annual convention, Asheville, N. C.
Oct. 24-Nov. 10—9th Air Transportation Institute, The American University, Washington, D. C.
Oct. 31-Nov. 2—Annual Forum of the Packaging Institute, New York.
Nov. 5-7—National Traffic Committee of the Trucking Industry special meeting, Washington, D. C.
Nov. 8-10—Fourth Canadian National Packaging Exposition, Canadian National Exhibition Grounds, Toronto, Canada.
Nov. 9-11—19th Annual Time and Motion Study and Management Clinic, Sherman Hotel Chicago.
Nov. 14-17 — Second International Automation Exposition, Navy Pier, Chicago, Ill.
Nov. 17-18—National Industrial Traffic League, 48th annual convention. Executive Committee meets Nov. 15-16, Chicago, Ill.

Nation's Motor Freight Carriers Reduce Net Claim Ratio to All-Time Low; 1954 Ratio 14 Per Cent Better Than '53

In 1954 the nation's trucking industry succeeded in reducing its ratio of net claim payments to gross revenue to an all-time low by achieving a 14 per cent reduction under 1953, according to the National Freight Claim Council of the ATA.

In 1953, 100 motor common carriers reported a total gross revenue of $593,329,606. Net loss and damage claim payments for these carriers was $6,983,091 — a ratio of 1.18.

During 1954, 100 reporting motor carriers listed a total gross revenue for the year of $561,926,287. Net loss and damage claim payments during this year amounted to $5,746,304—a ratio of 1.02.

The .16 reduction reported for 1954 over 1953 indicates a 14 per cent improvement. Additional reports from carriers which have not as yet submitted their claim statistical reports indicate an even greater actual reduction, according to the ATA.

—DA—

Three top officers of the newly created Highway Div., Federal Civil Defense Administration, were sworn in Aug. 11. They are: Einer Mohn, vice president, International Brotherhood of Teamsters; Alec Scherer, Scherer Freight Lines, Ottawa, Ill., and William Noorlag, director, Central Motor Freight Assn., Chicago, Ill.

—DA—

Traffic Institute Held

Marquette University, in cooperation with local transportation groups, offered a one-day Institute on Traffic and Transportation on Sept. 30. The first of a proposed annual series, the institute featured a study of competition in traffic and transportation.

—DA—

The following three warehouses have been awarded NARW safety awards: Crystal Ice & Cold Storage Co., Sacramento, Calif.; Merchants Refrigerating Co., Hopkins, Minn., and Merchants Refrigerating Co., Newark, N. J.

—DA—

The Southwest Warehouse & Transfermen's Assn. will conduct its Annual Convention in Oklahoma City Oct. 10-12.

—DA—

WASHO Recommends 15-Year Federal Highway Program

A 15-year Federal highway construction program, with definite authorizations for not less than a five-year period, was called for by the Western Association of State Highway Officials at its annual meeting in Jackson, Wyo., last month.

The association passed a resolution urging that the Federal government provide at least 90 per cent of the cost of the Interstate System, and not less than $900 a year for other Federal-aid systems. The group also recommends that at least half of the Federal excise tax on road users be used for roads, that the Federal tax be increased by adding 1¢ a gallon to the gasoline tax, and that the balance of the funds needed be secured by deficit financing.

(Please Turn Page)

Chuting the News . . .

(Continued from Preceding Page)

General Clay to Address Packaging Institute Event; 'The Pulse of a $10 Billion Industry,' Forum Theme

General Lucius D. Clay, chairman of the board, Continental Can Co., will deliver the keynote address at the three-day 17th Annual Forum of the Packaging Institute in New York, beginning Oct. 31. The theme of the forum, "The Pulse of a Ten Billion Dollar Industry," will be presented by the following business leaders:

Norman Greenway, vice president, Robert Gair Co., Inc.; Fen K. Doescher, vice president, Lily-Tulip Corp.; Charles W. Kaufman, vice president, Kraft Foods Co.; Joel Y. Lund, president, Lambert Pharmacal Co., and William Naden, executive vice president, Esso Standard Oil Co.

In addition to the major Management Day addresses, Packaging Institute, a packaging association of 415 corporate members, will present experts to discuss and exchange information on many facets of packaging. For two days, seminars will be held on a wide range of subjects, such as: Drugs and Pharmaceuticals, the Folding Carton, Education, Materials, Production Line, Adhesion, Films and Foils, Flexographic Printing, Package Design, and Packaging Machinery Automation.

—DA—

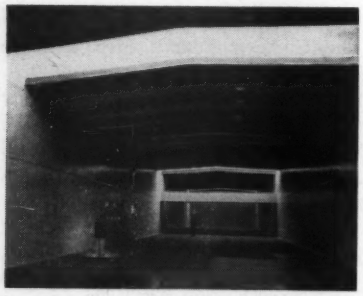
The ICC has announced that the 14 district directors of the Bureau of Motor Carriers, located in offices throughout the country, have been designated regional managers for the Commission in addition to their present duties.

—DA—

Eight executives have been appointed to the Packaging Planning Council of the American Management Assn. to serve with nine re-appointed members. New members are: M. W. Barnell, National Cash Register Co.; G. P. Charpie, W. T. Grant Co.; C. R. Gustafson, American Radiator & Standard Sanitary Corp.; F. W. Langer, Socony Mobil Oil Co.; J. V. Schade, Western Electric Co.; E. P. Troeger, Douglas Aircraft Co.; F. H. Wiley, International Harvester Co., and G. M. Woodruff, General Foods Corp.

—DA—

Kingsize Cargo Barge



Workmen are dwarfed in the huge interior of the new cargo barge recently launched at Dravo Corp.'s Wilmington (Del.) shipyard for C. G. Willis, Inc., Norfolk, Va. It will be one of the largest to operate on the Atlantic Intracoastal Waterway. The barge is 240 ft long and 43 ft wide. Its 149,200-cu ft cargo space is covered with weathertight rolling hatch covers which permit various loading and unloading openings up to 100 ft long. The barge is designed for either push-towing or pull-towing and carries 3,000 tons of cargo in fresh water

Southern Traffic League

The Southern Traffic League conducted a membership meeting Sept. 20 at the George Vanderbilt Hotel, Asheville, N. C. Daniel S. Andress, president of the league and division traffic manager, Kraft Foods Co., Atlanta, Ga., presided.

—DA—

Discussions of paper-work simplification and facts for the bargaining table highlighted the Annual Fall Meeting of the National Accounting and Finance Council, ATA, Sept. 18-21, in Detroit, Mich.

Pallet Group Honored

Dean Russell A. Stevenson (right) of the University of Michigan, presents one of the American Trade Associations Executives Outstanding Activities Awards for 1955 to William H. Sardo, Jr., secretary-manager of the National Wooden Pallet Manufacturers Association, in recognition of NWPMA's progressive program. The award was made last month at the 35th Annual Meeting of NWPMA, at Mackinac Island, Mich.

Club Briefs

The New Jersey Chapter, American Materials Handling Society, will conduct a tour through the plant of Continental Can Co. on Oct. 19.

Frank W. Turcotte, specialist in transportation law, spoke at a Traffic Consultant Day meeting of the **Los Angeles Transportation Club** last month.

The Traffic Club of North Jersey conducted its 4th annual Executives' Night at a meeting in Paterson, N. J., on Sept. 19.

Al P. Heiner, Kaiser Steel Corp., was elected president of the **California Chapter, American Society of Traffic and Transportation,** at that group's recent annual meeting.

The Traffic Club of Philadelphia conducted its annual Fall Outing on Sept. 20.

George Ellig took office as president of the **Metropolitan Traffic Assn. of New York** at an installation meeting on Sept. 8.

Omicron New York Chapter, Delta Nu Alpha, opened the season with a meeting on Sept. 6. William Cavanaugh, of American Sugar Co., is president.

—DA—

Missouri Pacific Lines plans to inaugurate a unique Piggy-Back service next month, in which the railroad will transport by rail loaded containers or truck bodies, as opposed to the conventional system in which complete trailers are hauled.

Traffic Club of Greater Miami Elects

Shown above, from left to right, are: M. T. Richmond, president of the Florida Trucking Assn.; C. Fuller Nall, new president of the Traffic Club of Greater Miami, Inc.; C. C. Vaughn, retiring president, and Robert J. McBride, general manager, Regular Common Carriers Conference, ATA. Other officers named were: C. H. Ryan, vice president; J. C. Wilcox, recording secretary; W. H. Collings, corresponding secretary; J. F. Rice, treasurer

Carrier Liability Change

The ICC has been asked to hear oral arguments and to approve the application for a new National Motor Freight Classification rule to limit carrier liability for loss or damage on shipments to $3 a pound, unless the actual value is stated on the bill of lading.

Under Section 20 (11) of the Interstate Commerce Act, common carriers are prohibited from in any manner limiting their liability for loss or damage to goods transported unless an application setting forth the exact manner and form of limitation is submitted to and approved by the ICC.

The new rule would be inserted on behalf of the motor common carriers listed in the National Motor Freight Classification. The petition was filed by the American Trucking Associations, Inc.

—DA—

HHG Carriers Bureau Meets

The Annual Meeting of the Household Goods Carriers Bureau will be conducted at the Dupont Plaza Hotel, in Washington, D. C., on Oct. 14. The meeting has been called to review Bureau activities during the past year, and for the election of six members to the Board of Directors.

Two conferences of wooden pallet manufacturers will be conducted on the West Coast this month. Both are sponsored by the National Wooden Pallet Manufacturers Assn. The first will be at the Sheraton-Town House Hotel, Los Angeles, Oct. 14. The second is scheduled for Oct. 21 at the Sheraton-Palace, in San Francisco.

—DA—

Distribution Conference

A number of national authorities on distribution will address the 27th Annual Boston Conference on Distribution, Oct. 17 and 18, at Hotel Statler, Boston.

Leaders in the fields of world trade, retailing, business research, advertising, marketing, manufacturing, selling and agriculture will discuss the significant economic trends effecting distribution and standards of living.

The Boston Conference attracts a nation-wide audience interested in the practical analysis of distribution problems and what lies ahead. It is sponsored by the Retail Trade Board of the Greater Boston Chamber of Commerce in cooperation with Harvard University, Boston University, Massachusetts Institute of Technology, and others.

News Briefs

There were 1,162 vessels of 1,000 gross tons and over in the active ocean-going U. S. merchant fleet as of Aug. 1, according to the **U. S. Maritime Administration.**

Branch Motor Express Co. has been presented with its fifth consecutive annual award for outstanding achievement in loss prevention, to establish a record. The award was presented by **Liberty Mutual Insurance Co.**

The Federal Maritime Board has authorized the purchase, by **United States Lines Co.**, of **South Atlantic Steamship Line, Inc.**, Savannah, Ga.

Intercity truck tonnage transported during the second quarter of 1955 was up 14 per cent over the same period in 1954, and up 6.3 per cent over the record second quarter level of 1953.

The U. S. Maritime Administration has approved requests for mortgage and loan insurance on five more roll-on-roll-off ships.

The Mississippi River port of **Dubuque, Ia.**, is building a new harbor as the first step in the development of three new industrial districts comprising 514 acres.

Magnesium Company of America has announced the formation of a Canadian subsidiary, **Magcoa Ltd.**, with offices in Toronto. Magcoa Ltd. will produce magnesium dock boards, yard ramps, and other materials handling equipment.

Spector Motor Service, Inc., has changed its name to **Spector Freight System, Inc.** According to the company, the new name more correctly interprets the role of the motor common carrier in the transportation system.

Rail Trailer Co. of Chicago has teamed up with **Clark Equipment Co.** to develop Clark's new Mobilvan Container System.

The first airline use of closed circuit television is underway at the Portland (Ore.) Airport, where **United Air Lines** is testing TV for the dissemination of flight information.

—DA—

The Third Annual Meeting (12th Regular Meeting) of the Middlewest Shipper - Motor Carrier Conference will be conducted Oct. 4-5, at the St. Paul Hotel, St. Paul, Minn.

—DA—

NARW Executive Committee

The Executive Committee of the National Association of Refrigerated Warehouses will meet in Washington Oct. 10-11.

(*Please Turn to Page* 21)

Ideal from every angle-

Mack's

NEW CAB-FORWARD D SERIES

Mack's carefully-planned, well-designed, cab-forward series with the Verti-Lift cab *holds all the aces* for efficient hauling of maximum standard or specialized cargoes, in city delivery services or over the road. Take a quick look at all their features, and you'll see why:

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MANEUVERABILITY. Shorter turning diameter—for instance, with 81½" cab-to-rear axle dimension, turns can be made in a 34-ft. diameter circle. Easy parking and steering. Simple, conventional controls. Proved Mack Magnadyne® engine provides ample power for the steepest hills, quick pick-up in stop-and-go city traffic.

DEPENDABLE, ECONOMICAL. Uses Mack-built, Mack-proved components with Mack's consistently powerful, fuel-saving engines, rugged, smoothly operating transmissions, dependable brakes. In every respect, these are real Macks—the longest-lived, most productive and economical units you can operate.

ADAPTABLE. 20,000 lbs. to 28,000 lbs. G.V.W. as platform truck, and as a tractor in the 40,000-53,000 lbs. G.C.W. range, four wheel or six wheel, this versatile cab-over is adaptable to your specific requirements.

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Chuting the News . . .

(Continued from Page 15)

Waterways Tolls Opposed

Opposition in certain fields of transportation seems to be developing against a Hoover Commission recommendation that freight carriers using the improved rivers and canals pay a toll to the Federal government. Thirty national organizations, representing industry, agriculture, commerce, and transportation met in St. Louis last month to organize a national movement to kill the proposed tolls bill.

The National Small Shipments Traffic Conference conducted its Third Annual Meeting Sept. 21-23, in Chicago, Ill.

—DA—

Car Loadings

		1955	1954
January	(4 wks.)	2,524,775	2,489,506
February	(4 wks.)	2,575,082	2,461,745
March	(4 wks.)	2,621,087	2,411,886
April	(5 wks.)	3,432,895	3,093,083
May	(4 wks.)	3,062,863	2,696,753
June	(5 wks.)	3,782,011	3,348,853
July	(4 wks.)	3,033,924	2,632,005
August	(4 wks.)	3,113,689	2,708,186
Total		24,146,326	21,842,017

Packer Receives Award

Howard Olsen, left, a packer at Pitney-Bowes, Inc., Stamford, Conn., receives an award check for $1,078 from foreman Alan Mead. Olsen, who previously won $320 for another idea, earned his latest award by suggesting an improved packing and packaging method

MEN in the NEWS

Traffic

Michael A. O'Brien—elected president, Michigan Traffic Assn. He is assistant freight traffic manager of Railway System, Detroit, Mich.

William J. Curtis—appointed Eastern Div. traffic manager, headquarters in Chicago, Kaiser Aluminum & Chemical Corp.

R. A. Appleman—appointed acting general traffic manager, Esso Standard Oil Co., New York, N. Y.

John A. Hart—named vice president for traffic, National Biscuit Co., New York, N. Y. He succeeds **Herbert E. Wiggin**, retired.

Bert M. Fischer—appointed general traffic manager, National Can Corp., Chicago, Ill.

Raphael J. Janer—appointed general traffic manager, Penn-Dixie Cement Corp. He succeeds **D. S. (Ted) Browder**, retired.

Transportation—Air

Charles L. Vaudrey—named Chicago purchasing manager, United Air Lines.

Highway

John W. DeVenne—new president, The Western Express Co., Cleveland, Ohio. He succeeds **J. C. DeVenne**, who becomes board chairman.

J. O. Hancock—promoted to assistant general manager, Great Dane Trailers, Savannah, Ga.

Harold B. Streem — named vice president in charge of finance, Strick Co., Philadelphia, Pa.

Harold Gray—named field manager in 15 states, National Highway Users Conference.

William S. Myrin—appointed vice president, Consolidated Freightways, Portland, Ore.

M. T. Sprague—named Oakland, Calif., district manager, International Harvester Co.

Richard Evans—named Indianapolis terminal manager, Brady Motorfrate, Des Moines, Ia.

Henry Liebschutz—appointed assistant to the chairman of the ATA Foundation, Inc. **Robert L. Abel**—named radio and communications engineer of the ATA. **Edward D. Hicks, Jr.**—named director, ATA Field Service Dept.

Frank P. Lucas—named assistant to the executive vice president, Pacific Intermountain Express Co., Oakland, Calif. **Gordon G. Bullock**—appointed perishables superintendent.

Rail

Arthur C. Ritter—named general manager of properties, Union Pacific Railroad, Omaha, Neb.

W. H. Lloyd—appointed manager purchases and stores, Rock Island Lines, Chicago, Ill.

Doswell Gullatt—new assistant to vice president, Waterway Transportation, Assn. of American Railroads.

Ben Colman—named president newly-formed Greenville-Evans Co., Pittsburgh, Pa.

B. F. Biaggini, Jr.—appointed vice president, Texas & New Orleans Railroad Co.

Water

Lloyd A. Menveg—re-elected president, Los Angeles Board of Harbor Commissioners. **Vice Admiral Howard F. Kingman**—re-elected vice president. **Rear Admiral Edward V. Dockweiler**—appointed chief harbor engineer.

Henry Davison—appointed director of terminals, The Port of New York Authority.

Edward D. Ransom—appointed general counsel, Maritime Administration, U. S. Department of Commerce.

Materials Handling

T. E. Snyder—appointed manager advertising and sales promotion, Exide Industrial Div., The Electric Storage Battery Co., Philadelphia, Pa.

(*Please Turn to Page* 116)

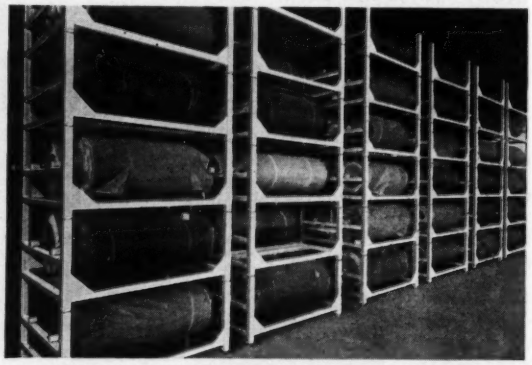
"Stack up" with

here's an exclusive American feature

American STORAGE RACKS

When you "stack up" with American Tubular Storage Racks, you also "stack up" savings. The ingenious and simplified American feature, "erected without bolting or welding," has made them first choice with many businesses both large and small. American Racks are designed to meet practically every storage need. Send for catalog and get the facts on American before you buy any type of rack.

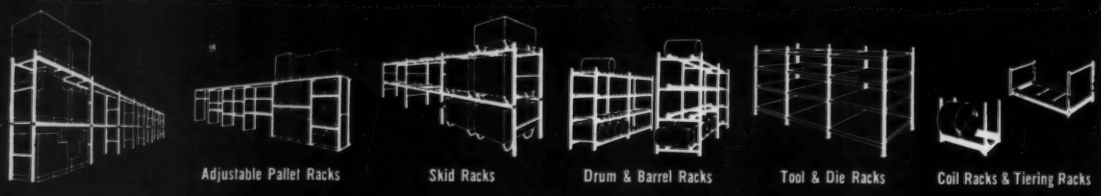
AMERICAN HEAVY DUTY PALLET RACK INSTALLATION
Republic Gear Company, Detroit, Mich.



AMERICAN PORTABLE TIERING RACK INSTALLATION
Automotive Rubber Co., Detroit, Mich.

send for catalog

There's an American Rack for every storage need



among those sold on American are:

A. C. Spark Plug Division
Anheuser-Busch, Inc.
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Carnegie Illinois Steel Corp.
Chevrolet Motor Division
Chrysler Corp.
Cities Service Oil Co.
Colgate-Palmolive Co.
DuPont de Nemours & Co., Inc., E. I.
Ford Motor Co.
General Electric Co.
Goodrich Company, The B. F.
Heinz, H. J., Company, Inc.
Kroger Company, The
Radio Corporation of America
Rexall Drug Co.
Sherwin-Williams Co.
Socony-Vacuum Oil Co., Inc.
Standard Brands, Inc.
U. S. Atomic Energy Commission
U. S. Steel Co.
F. W. Woolworth Co.

AMERICAN METAL PRODUCTS CO.

STORAGE RACK DIVISION
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Washington DA

By Ray M. Stroupe, *Chilton Washington News Bureau*

LINE SALE ENDORSED—Clearing the way for new ownership of the South Atlantic Steamship Line, Inc., Savannah, Ga., is Federal Maritime Board approval of its purchase. The buyer is the United States Lines Co., which gets four C-2 cargo vessels in the transaction. By Jan. 1, 1961, the owner must contract for domestic building of four new vessels to replace these ships.

AGENCY CHANGE MADE—Motor carrier rate matters at the ICC are to be handled in the Bureau of Formal Cases, in keeping with an organizational shift just completed. Stephen A. Aplin, who will be responsible for supervising the rate work, is transferred from the Bureau of Motor Carriers. He will be assisted by seven other employees detailed to this special activity.

WEIGH PIPELINE PLAN—Oil transmission line expansion is under study by the ODM. Competing companies, the American Pipe Line Corp. and Texas Eastern Transmission Corp., have plans to build a $160-million line from Texas to the East Coast. A national defense tie-in with this project is envisioned by the ODM, which is expected to authorize federal financial aid for the builder.

PETITION IS DENIED—Dismissed by the ICC is a trucking industry petition relating to purchased operating rights. A current rule requires a carrier who buys another carrier to amortize, or write off to surplus, the cost of the rights. ATA had urged that the buyer be allowed to capitalize the cost permanently. Dismissal does not preclude ATA intervention in any actual case before the ICC.

RELIEF PLEA VOICED—Weighty labor costs have prompted some trucking firms in the northeast to request ICC permission to raise their freight charges by 6 pct. Plea was presented to the ICC by the New England Motor Rate Bureau, Inc., of Boston, representing 800 interstate truckers. Proposed new rates would apply to many commodities moved within New England and between that area and the New York metropolitan district.

NET INCOME CLIMBS—Railroad net income in the first seven months this year is computed at $490 million, outdistancing that in the corresponding months of 1954 by more than $200 million. Total operating revenues were up by $295 million in January-July, for an increase of 5.5 pct. In the 12 months ended July 31, the rate of return averaged 4.05 pct, compared with 3.32 pct in the previous 12 months.

ENGINES AID RELIEF—All Army diesel-electric locomotives were removed from storage for operation by five Eastern rail lines in relief work in the flood-damaged northeastern states. Users of the 104 engines are the New York Central, Erie, New Haven, Pennsylvania, and Lackawanna roads. With a four-month lease, the carriers agree to pay all costs involved in taking the engines from and returning them to storage.

OPENS LUMBER ROUTE—States Steamship Co., Seattle, is authorized by the ICC to enter the lumber trade between points in the Pacific Northwest and three New England ports. Actual transportation will be performed by Pacific-Atlantic Steamship Co., controlled by States Steamship. The latter had also asked for amendment of its operating certificate to permit entry into the Pacific coastwise trade, but the ICC vetoed the request.

TONNAGE HITS PEAK—Continuing an uptrend which began late last year, intercity truck tonnage is climbing. Statistics from the ATA show a record second quarter in which highway carriers moved nearly 63 million tons of freight. This total was 6.2 pct above the previous top second quarter of 1953. All regions except the Pacific and Rocky Mountain made gains in the recent period.

ACQUIRE TANK CARS—Three private companies are new owners of 447 pressure tank cars offered for sale by the government. Asking price for the cars, built during World War II, was $5,100 each. Union Tank Car Co. and General American Transportation Corp., both of Chicago, bought 225 and 172, respectively. Vendome Tank Car Co., Tulsa, Okla., bought 50.

BUY GRAIN SHELTERS—Bound for four midwestern states where commercial storage space now is hard to get are 13,300 grain bins owned by the government. Newly bought by the U. S. Agriculture Dept., the circular steel bins have a capacity of 43 million bu and cost about $10.3 million. They will be used chiefly to house corn from last year's crop in Illinois, Iowa, Indiana, and Minnesota.

SHIP STARTS CLOSER—Mortgage insurance approved by the U. S. Maritime Administration will help to start work on five roll-on-roll-off trailerships. Three companies plan to construct the vessels, expected to cost about $23.5 million. Transportation Utilities, Inc., New York, and Alaska Trainships, Inc., Seattle, intend to build two ships each. TMT Trailer Ferry., Inc., Miami, will build one.

UP UP UP

Modern Traffic Department Series—Part II

A well run industrial traffic department can be a vital factor in lowering production costs and increasing sales—but only if the traffic manager has recognition at the management level

OCTOBER, 1955
Vol. 54, No. 10

Meet the Newest Member of the Management Team

By D. G. Ward
Director of Transportation
Olin Mathieson Chemical Corp.
as told to
John H. Frederick
DA Transportation Consultant

AN INCREASING number of top management teams have added a new member. His value to the team effort is exhibited by the fact that, often, actual cash savings brought about by the efficient operation of his department run into the hundreds of thousands of dollars. Such annual savings have been known to reach the seven figure class.

Often, more than any other single executive, he is responsible for the handling of one of the few remaining controllable costs in the corporate budget. Often he plays a key role in the final determination whether his company winds up in the black or in the red each year. Often, too, he is able to avoid losses that might otherwise arise.

Principal Concern

His activities are many, relating directly to a great variety of corporate affairs: Sales, production, research, purchasing, advertising and the like. His principal concern, however, is transportation; and hidden in most large transportation bills is a 10 per cent controllable cost element.

In fact, savings in transportation costs often are the measure of profit of the business concerned. Next to materials and labor, transportation generally looms as the largest single cost item; often taking 27 cents out of every sales dollar. These costs are controllable to a very large degree. Business is finding this out and making a profit out of traffic departments.

The traffic manager often is a key figure in other ways than controlling what a company *pays* for transportation. For example, a large company planned to spend about $120,000 for the construction of a spur track to a new plant site. When the traffic man took a look at the situation he informed management that the job could not be handled for less than a half million since the proposed site was smack up against the side of a high bluff adjacent to a stream; a situation which would have meant the building of a bridge and a railway lead-in.

In another case, the traffic manager was concerned with a storage problem since his company needed adequate reserve supplies within easy reach, but lacked sufficient room on the factory property. Based on railroad storage in transit rules, an arrangement was worked out to store on railroad property with deliveries to the plant as needed at a saving of some $50,000 to $70,000 per year based on the elimination of one plant handling, loss of the use of the factory land space and lower inventory.

In another case, the use of a tank car fleet was involved. Here the traffic manager instituted a careful study of operating expenses for this fleet, an investment on which the company was earning only 2 per cent, compared with earnings of nearly 20 per cent on money used in its regular operations. The cars were valued on the books at only $300,000. A leasing company was found willing to purchase the fleet for $1 million, resulting in a substantial capital gain. So, by taking advantage of the trend toward leasing instead of owning tank cars, the company was relieved of an operating burden and obtained additional capital for normal operations; thanks to smart traffic management.

Despite the vital role played by traffic men in corporate distribution practices and despite the

(*Please Turn to Page* 70)

Civilian Air Cargo Trends

By D. W. Douglas, Jr.

Vice President
Military Relations
Douglas Aircraft Co.

With the development of new cargo aircraft—through continued 'military parentage'—the author predicts an airfreight boom, and sees today's 22.87¢ ton-mile rate eventually falling to 5¢

AIR CARGO transportation is a war baby that is still trying to grow up. Despite some rather spectacular post-war growth, it still has not reached the size that many of its well-wishers once expected. Just how soon it will be able to do so depends in large measure on its military parentage.

What is being done in the field of military cargo airlift undoubtedly holds the key to the future of civil air cargo transportation.

The reference to "military parentage" is literally true. Aviation historians have credited the U. S. Army Air Corps with introducing, in 1937, the first scheduled air cargo service in this country. Using Douglas C-33 and C-39 transports and some smaller planes, the Air Corps began a regular cargo-and-personnel-transport service between major air depots, their sub-depots and major bases.

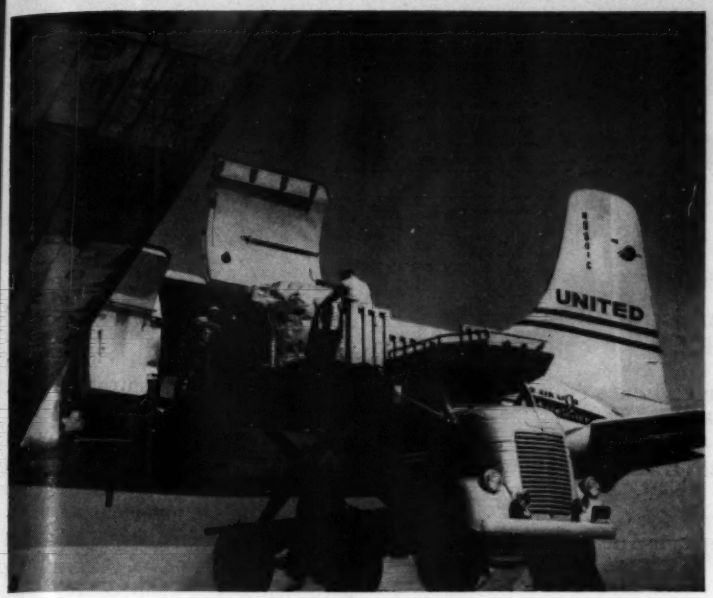
This service expanded into the Air Transport Command. ATC's wartime accomplishments, along with those of the Naval Air Transport Service, became one of the brightest chapters in the history of World War II.

First Civil Air Cargo

The tremendous job done by military planes and personnel during the war, and the forthcoming availability of both for civilian use, gave rise to some excessively rosy predictions as to the peacetime future of air cargo transportation. Thousands of men in the air services probably dreamed of the day when they would take part in a private air freight venture. Approximately 200 such companies came into existence. Now, of course, the number has dwindled to a handful for a number of reasons, some of them beyond the control of the operators.

The established airlines entered

Better ground handling, considered a necessity if airfreight is to get its share of carrier business, is getting a shot in the arm through the use of such equipment as this tractor-trailer



DA-6A being loaded with a piece of heavy machinery. Machinery and parts comprise 11.6 per cent of the total goods shipped via air cargo carriers

the field early. In October, 1944, American Airlines introduced scheduled civil air cargo, making the service available over its entire system. In succeeding months, other airlines quickly followed suit.

Increased Volume

It has been estimated that 24 million ton-miles of air cargo were flown in 1945. This figure jumped sharply in 1946 to a total of 120 million ton-miles. By 1953, the total was 450 million ton-miles.

In 1954 this trend was reversed. The number of air cargo ton-miles dropped slightly to 436 million. Significantly, the cost per ton-mile on United States domestic trunk carriers increased from 22.26 cents in 1953 to 22.87 cents in 1954. Similar increases were recorded in other categories of air cargo transportation.

Current Problem

Here, then, is the nub of the problem. Costs that declined from 28.30 cents per ton-mile in 1946 to 19.22 cents in 1948 have started moving upward. The whole future of the air cargo industry demands that they move the other way.

The Wayne University study based on 1948 data, although out of date, remains the most exhaustive of its kind that we have available. It showed that the approximately 150 million ton-miles of air cargo in 1948 amounted to less than one five-thousandth of the trillion ton-miles of freight transported annually in the United States. Even though air cargo has tripled since that time it still represents only a tiny fraction of the total. Cost has been the barrier to further growth.

In discussing the potential of air cargo we admittedly must rule out a huge volume of freight such as products of mines, forests and farms, which account for a large portion of the total. But there still remains a tremendous amount of freight, running into billions of ton-miles, which can be carried by air if the cost can be reduced to 10 cents a ton-mile or less.

As an indication of the immediate potential of civilian air cargo, it may be worthwhile to take a look at some of the items which already are going by air. Natu-

(*Please Turn to Page* 69)

Anchor rings and cargo nets in DC-6A permit the safe stowage of mixed cargo with a maximum of protection

Valuable items and items needed quickly, such as these aircraft parts, make up a good part of airfreight volume

ATC Conducts 32nd Annual M

'What's Ahead in Transportation' is the theme as the Associated Traffic Clubs of America hears some of the nation's leading experts discuss traffic problems—Harold Stassen talks on the prospects for world peace

ATTENDANCE at the 32nd Annual Meeting of The Associated Traffic Clubs of America, held September 19 and 20 at Hotel Cleveland, in Cleveland, established a new high record.

The program, which had for its theme "What's Ahead in Transportation," featured prominent rail, highway, water and air carrier executives as speakers. Topping the list was Harold E. Stassen, special assistant to President Eisenhower, who was principal speaker at the Annual Banquet.

Arms Inspection

Stassen, who was introduced as the "Secretary of Peace," spoke about President Eisenhower's suggestion for open arms inspection at the recent Geneva "Summit Meeting."

He said, "The same amount of atomic energy contained in an atom bomb that could destroy a city, if used as an instrument of destruction, could furnish industrial and domestic power and light for that city for several years if used as an instrument of peace."

He pointed out that the presence of uranium ore in any area can be detected with electronic instruments but that there are no instruments that can detect the presence of an atom bomb stockpile. Citing that as one of the many obstacles America faces in its quest for peace, he added that this nation always has overcome every obstacle in its growth and rise to world leadership. This he attributed to America's determined adherence to sound basic principles.

Stassen then outlined 11 principles, which "if adhered to with equal determination, should just as certainly serve as the path to peace."

Some of the principles he listed were: A sure means of arms inspection, restraint and patience in our dealings with other world powers, maintenance of adequate strength to deter aggression, free exchange of scientific knowledge, a sound and strong national economy, and that "we must continue to remain true to our ideals of liberty, basic principles, and spiritual values under God."

Officers Re-elected

All officers of the ATC, headed by L. A. Pomeroy, Jr., traffic manager of the National Malleable & Steel Castings Co., Cleveland, were re-elected to serve another year. Several new directors were voted to replace those whose terms had expired, and two new regional vice presidents were named.

The convention proper opened on the morning of Sept. 19 with group meetings of the Council of Club Presidents, presided over by Frank O'Neill, and the Club Publications Committee, with Chairman E. L. Schroeder presiding.

An open meeting was conducted in the afternoon by the Education and Research Committee, with Dr. G. Lloyd Wilson as chairman. Special guests included Dr. J. Marshall Gersting, director of the Transportation Dept., John Carroll University, and Major J. Miller, connected with John Carroll's ROTC Transportation Corps.

Father Welfle, head of the Jesuit University, outlined the school's aims as a national transportation training center. Major Miller outlined JCU's military transportation course, and Dr. Gersting covered its non-military transportation curriculum.

General Meeting

The first general meeting was conducted the following morning. Reports heard included: Nominating Committee, A. H. Schwietert, chairman; President's Report, L. A. Pomeroy; Board Chairman's Report, T. C. Burwell; Membership Committee, D. S. Mackie, chairman, and Sustaining Membership Committee, Eugene Landis, chairman.

Speakers at this meeting, both of whom spoke on "What's Ahead in Transportation," included Admiral Lyndon Spencer, president of the Lake Carriers' Assn., and Neil J. Curry, president of the ATA.

Admiral Spencer spoke of inland water and lake transportation in relation to its growth, problems and the Cabinet Committee recommendations.

Curry pointed out that the motor carrier industry was successful because of its inherent economic and commercial advantages; that punitive taxation and legislation would not be in the "public interest."

Meeting

E. G. Plowman, vice president traffic, United States Steel Corp., spoke at a luncheon sponsored by the Traffic Club of Cleveland and the Cleveland Chamber of Commerce. He traced the developments and the contradictory variations in the national transportation policy.

The general meeting was resumed after lunch with reports of the Council of Club Presidents, the Education and Research Committee, the Public Affairs Committee, John S. Burchmore, chairman; the Club Publications Committee, the Treasurer's Annual Report, by R. P. Yellen, and the awarding of certificates by the Education and Research Committee.

Speakers, also on the subject, "What's Ahead in Transportation," were A. E. Perlman, president of the New York Central System, and W. A. Patterson, president of United Air Lines.

Perlman said if the railroads were permitted greater flexibility on management they could prosper and provide superior service. He outlined the New York Central's current improvement program that included all departments from accounting to freight yards, and embracing all personnel.

Patterson said the airlines met the challenge and achieved the objectives established by the government when it set up subsidies to establish air transportation. Those subsidies, he said, were reduced; except in limited areas. He said turbo-prop and jet equipment could cut current travel schedules in half.

The Board of Directors met on the day preceding the first group meetings, and again on the final day of the convention. At the concluding meeting the director accepted invitations for future ATC meetings.•

Should the ICC Recognize Lay Practitioners?

Excerpts from the winning paper in a recent essay contest on "Should the ICC Continue to Admit and Recognize Lay Practitioners?" sponsored by the ATC

By Mrs. Lois Marie Bunch
Woman's Traffic Club of Fort Worth, Texas

FOR YEARS there has been controversy regarding this subject. A few members of the American Bar Association have been trying to get a bill passed to exclude lay practitioners from practice before the ICC. They have not, as yet, accomplished their goal, for which the traffic profession may be truly thankful.

Law governing the different modes of transportation is a highly specialized field. The comparatively narrow scope it offers to a practicing attorney does not justify his specializing in this field. Attorneys with whom this subject has been discussed have expressed the opinion that there are enough civil and criminal law cases to keep them busy. They have no desire to take up transportation law because it would require more time than the remuneration would justify. However, there is a small percentage who have specialized in this field.

If the ICC continues to admit and recognize lay practitioners, the Commission is justified in raising the qualification standards, as was done in December, 1954. Revision of Qualification Standards has been discussed with many interested parties, and there are many arguments pro and con. The expressions offered against this decision have been more of a spur-of-the-moment reaction than studied opinions expressed after careful thought.

No doubt the earlier decisions of the Commission to question the qualifications of those appearing before it met with the same general discord. It is "much ado about nothing," in that there is little, if anything which can be accomplished towards having this decision reversed.

It might be well for all who are interested in making a career of transportation work, and are unhappy with the recent decision of the Commission, to consider the qualification standards of other professions—such as legal, medical, and educational. All require a minimum of four years of college work, and most require considerably more than this basic education.

The ICC requires only two years of college work.

If a lawyer is needed, certainly one who is qualified to handle the case to the best advantage is to be desired. Ordinarily, investigation of an attorney's record and qualification is made before engaging his services. When seeking the aid of a physician, one would

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Competition in Transport Reviewed by AST&T

Three panels and speakers review national transport policy and ICC decisions in light of public benefit and industry welfare; many advocate policy revision

THE third biennial conference and seminar of The American Society of Traffic and Transportation, at Harvard University Sept. 8-9, had for its theme "Competition in Transporation." Those in attendance, numbering almost 400, heard speakers and panelists outline current problems, suggest remedies, and speculate on the future of the industry if and when the national transportation policy is modified to permit more vigorous competition in the public interest.

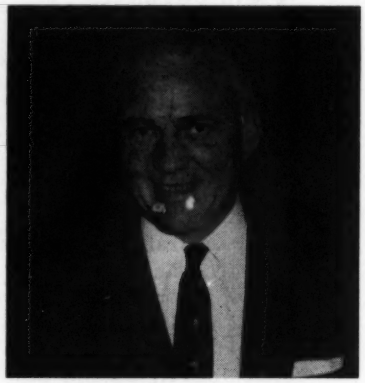
Representatives of all forms of transportation services as well as industrial transportation executives had an opportunity to present their views during three panel discussion periods. The afternoon of the second day was devoted to the business of the Society's annual meeting. During this period, the members re-elected the current officers, headed by Clare J. Goodyear.

McGinnis Favors Mergers

First of the three guest speakers was Patrick B. McGinnis. He commented on the railroad situation, as a whole, and on the report of the Presidential Advisory Committee.

"The railroads are partly to blame for existing conditions," he said. "They can't blame their lack of modernization, for example, on the truckers or governmental agencies."

He singled out such items as car couplers, bearings, and bolted rail sections as examples of outmoded and inefficient equipment in operation today. "You don't see truckers using antiquated wooden ice boxes that are found on every railroad line," McGinnis said.



Patrick B. McGinnis,
president of the New York, New Haven, and Hartford Railroad, who spoke at the opening day luncheon.

"How can the railroads claim to be efficient, low-cost carriers when they use such obsolete equipment?" he queried during his talk.

On the subject of mergers McGinnis said technical advances favor big companies, and that labor likes bigness for its possibilities of bigger benefits. He pointed to industry mergers, and that "even the government has merged the army, navy and the air corps.

"The only excuse for government regulation is to protect the shipper," he said; then added that the shipper would benefit much more if the carriers, including all types, would be permitted greater latitude in their operations.

He concluded his remarks by pointing to the lawmakers, not ICC, for correction of existing problems, and asked for a chance to prove that the railroads could be the lowest cost transportation system.

Jenkins Stresses Quality

Sir Gilmore Jenkins, president of London's Institute of Transport, permanent secretary of the British transport ministries, and principal speaker at the annual dinner, outlined the 9,000-member institute formed 35 years ago when rapidly expanding road transporation first became a problem on the islands.

"The quality of modern civilization," he said, "is determined by the quality of its transport."

John H. Winchell, ICC Commissioner, was speaker at second day's luncheon. He outlined the history, activities and scope of the 11-member Commission.

Panelists Scan Competition

The first panel had for its subject "Competition Between Regulated and Unregulated Competition," with Harold Koontz, professor of Business Policy and Transportation, UCLA, presenting the paper. F. W. Hussey, president, National Council of Farmer Cooperatives, and D. L. Sutherland, chairman of the board, Middle Atlantic Transportation Co., were commentators.

"The distinction between regulated and unregulated business," Koontz said, "lies in the lack of freedom which the former has in the economic incidents of managership. In transportation, the regulated company, unlike the regulated firm, may not enter or withdraw from markets, may not price its output without government approval, must meet special and often specific standards or price and service discrimination, and is subject to strict control over the nature, quality and extension of its service.

"Moreover, to make price and service control effective, regulation

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Emphasis on Cost In Freight Rate Making

The proper rate making technique, under competitive conditions, is for each type of carrier to price its services for certain hauls at rates which will yield a lower-cost carrier his costs and reasonable return

By G. Lloyd Wilson

Professor of Transportation, University of Pennsylvania

IN RECENT years there has been a decided change in emphasis from the time-honored basis of "what the traffic will bear" to a greater recognition of "cost" as the important factor in freight rate making.

The reasons underlying this change in policy and practices has been occasioned chiefly in railroad rate-making by the change in status of railroads from a position of monopoly or partial monopoly or inter-railroad competition, to a position in which the railroads are in intense competition not only with other railroads, but with other type carriers.

Rates based primarily upon the value of the service or what the traffic will bear averaged over all traffic of the same types are feasible only under conditions in which one type of carrier has a virtual monopoly.

Cost Data in Rate Making

The purpose served by the determination of cost in rate-making is not to base all rates upon cost alone; but to have costs serve as a guide to insure that the rates upon particular movements of traffic are compensatory, and to indicate the level to which certain rates may be reduced to meet competition without going below out-of-pocket costs or below average total costs, so as to avoid transferring the burden of producing adequate revenue upon other items of traffic.

Cost data enable rate makers to locate rates properly in the zone of reasonableness between the minimum of out-of-pocket costs and the maximum of what the traffic will bear, or the value of the service.

If freight rates on particular movements are too high, the traffic is diverted to other types of carriers. If they are too low and do not yield at least out-of-pocket costs and yet, on the average, yield fully allocated cost, including reasonable return, the traffic will be retained; but the burden of producing revenues which will cover all cost and yield a reasonable return to the carriers will be shifted to other traffic.

Either alternative is a poor method of rate making and unsound economics. The proper rate-making technique, under competitive conditions, is for each type of carrier to price its services for particular hauls at rates which will yield the lower-cost carrier total cost and at least a reasonable return.

The higher cost carrier should be permitted to compete for this traffic at rates which yield at least out-of-pocket cost and, preferably, rates which yield something, however slight an amount, over out-of-pocket costs. Pricing according to this pattern will insure shippers rates which are reasonable. It also will insure carriers of all types rates which are at least compensatory, and protect carriers against ruinous competition.

If cost-considered rate making does nothing else—and it does do much more—it saves carriers from the absurdity of publishing paper rates. These are rates which are so out-of-line with competitive rates of carriers of other types that, although the rates appear in published tariffs, they are not actually used because the traffic is not attracted by the rates.

Costs are difficult to obtain in any complex industrial enterprise. They are particularly difficult to compute in the transportation industries where many services with respect to many different items of traffic are performed in the same vehicles or combinations of vehicles at the same time.

The responsibility for studying costs is not a task which can best be done by any individual, whether that person be an economist, a statistician, a cost accountant, an engineer, or a practical transportation man—whatever his background. There are problems of theoretical economics, statistics, accounting, engineering, and practical experience which can best be solved by a task force in which all or at least several of these professional skills are represented.

Another cautionary signal in cost finding should be noted—costs change with changes in the degree of utilization of facilities, with changes in the size of plant, with changes in wage rates and working rules and conditions, with changes in volume of traffic, and other variable factors. Realistic

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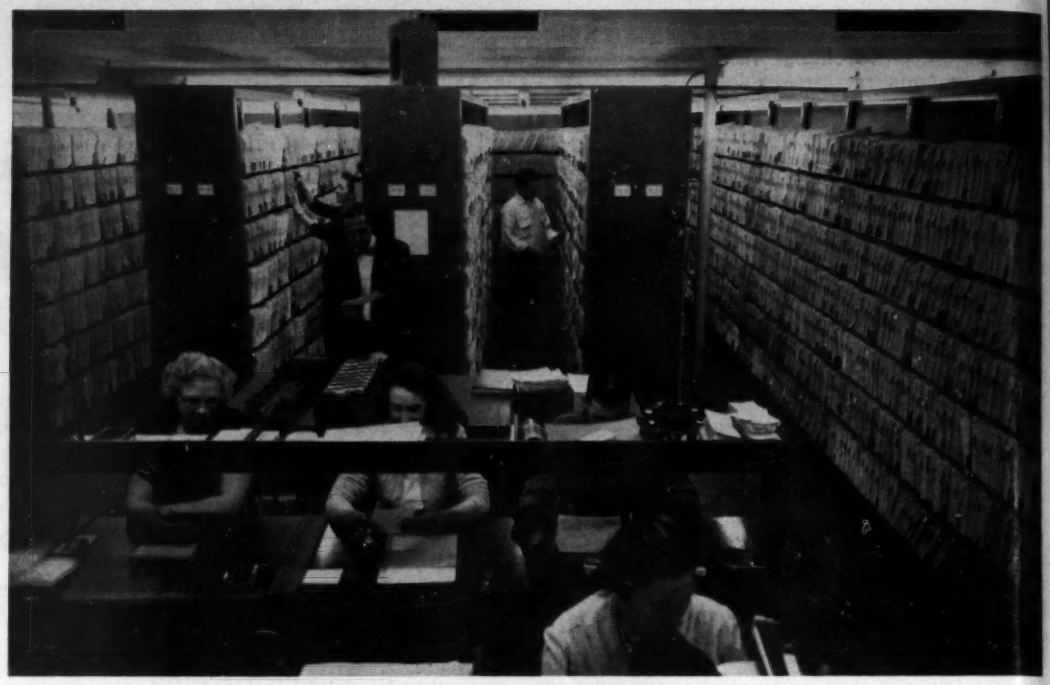
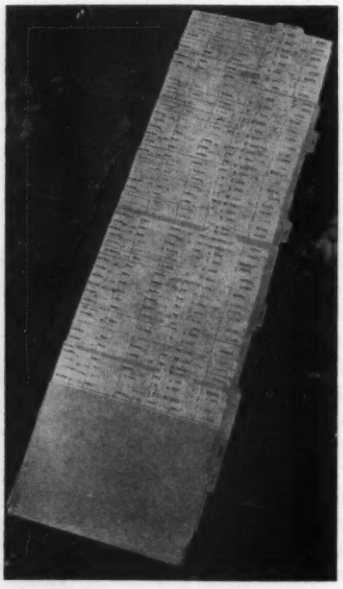


With installation of the terminal digit filing method, and by making one clerk responsible for each section, confusion and congestion in the file room are cut

Paperwork Simplification in H



Contract files are easily located in Remington's new open shelf system

Terminal digit filing system has speeded paperwork routine,

THERE is no more tangible element in the household goods moving industry—both from the cost and labor angles — than paperwork. In handling more than 60,000 moves a year, North American Van Lines finds that keeping files and processing paperwork on active and recent contracts is an extremely important phase of the business.

NAVL handles a move every 2½ minutes of every working day, resulting in 60,000 sets of shipping papers—called contracts—each consisting of about 25 pieces of paper. Each file moves through several departments in the offices, averaging five times in and out of the central file in the general offices in Fort Wayne.

Efficient handling of all this paper a year ago, was becoming an increasing problem. The problem has been solved with the installation of an open shelf, terminal digit filing system for current contracts.

NAVL operates 23 service and dispatch offices serving the entire United States, Canada, Alaska and Hawaii, doing business through more than 1,000 agents, with 1501 company-owned or -operated road units, and an ocean van service to overseas points.

Last year, the firm moved 240,-

The dark tabs shown at the bottoms of the shelves are charge-outs, with pockets for index cards telling exactly which department has the file out

HHG Warehousing

drastically cut error ratio, saved space, cut confusion

By Kenneth W. Maxfield, Coordinator
North American Van Lines, Fort Wayne, Ind.

665,070 lb of household goods, office equipment, trade show displays and special commodities. However, the significance of these facts lies not in the size of the operation today, but in its phenomenal growth. In 1954, hauling revenue amounted to $20.7 million. Ten years earlier, it was only a little over $821 thousand. Even as recently as 1951, the business amounted to less than $12 million.

With a volume of business which has doubled itself many times during the past few years—and initially dependent upon literally tons of paperwork—it is not difficult to understand why the efficient handling of files is vital.

The Principal Problem

While there are other filing problems, the principal one involves contracts, which are the heart of the business. As noted above, we are moving more than 5,000 shipments a month, and last year exceeded 62,000.

Individual contracts come from an agent through the dispatch department, and the agent's and driver's papers are assembled in the contract department, where the files are maintained. Papers on each shipment eventually must go through rating, billing, tabulating, accounts receivable, and in some cases other departments where special processing is required.

An agent sends an order to one of seven dispatch offices, located in Portland, Ore.; Los Angeles, Atlanta, Des Moines, Dallas, Fort Wayne or Clifton, N. J. At this point, a contract number with an area prefix letter is assigned to each order. The order form is in duplicate, and there may be three or more attachments to it, such as a copy of our Certificate of Liability, special shipper's instructions, etc.

Contract Department

These papers are filed in the contract department until a bill of lading and inventory are received, at which time the service order is pulled and the entire file assembled in final form after checking to see that all papers are in order. This is where the heaviest activity begins, there being as many as 2,500 to 3,000 sets of papers in and out of the contract department daily.

The rating department checks mileage, rates and commissions. Shipments to be billed to commercial accounts or the federal government, which comprise about 68 per cent of our total contracts, go to the billing department. The other 32 per cent, of course, are cod shipments and no billing is required.

On those which are billed, a copy of the bill is inserted in the master file and then released to the tabulating department, which reproduces the rating information in seven copies for distribution to various departments in the organization and to agents.

Following necessary routing of the papers, they are returned to the contract department for filing and remain there usually for about 18 months. Previously, this current filing presented a real problem because of the space required by a drawer-type system.

For years NAVL had maintained

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Warehouse Problems Made 'Palletable'

The use of the unit load-pallet system in this farm implement warehouse brought order out of chaos—improvements include a substantial space saving, a reduction in handling time, less breakage, and easier inventory

PALLETIZATION of odd-shape and odd-density items by an Iowa farm implement firm has resulted in a more efficient and more productive warehouse and handling program.

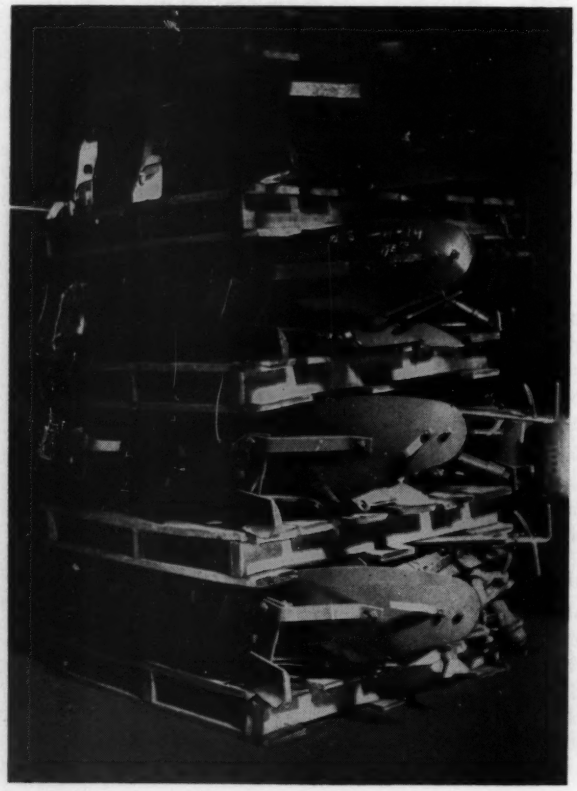
By applying the unit load principle to machinery, equipment, and parts which previously had been handled and stored on a piece-by-piece basis, the company realized a six-point saving.

1. Available storage space was increased considerably. Space-consuming scatter-piles were converted into well arranged, higher piles of loaded pallets.

In one instance alone, the use of the unit technique permitted the restacking of 60 manure spreaders in six-high pallet loads within 600 sq ft of floor space. Previously the same equipment had occupied more than 5,000 sq ft of floor space.

2. Warehouse handling time was reduced. Since all of the parts of each machine are spotted in a single location, warehouse personnel save valuable time previously wasted in searching for missing items to complete an order. In addition, seasonal re-arranging

Four bottom plows, minus the beams, are piled five high in pallet units, utilizing previously wasted air rights



Wherever possible, pallet loads are arranged so that a flat item tops the load, providing a good bearing surface

Under the old arrangement, disorderly piles made it difficult to assemble a complete machine for any shipment

of stock has been simplified.

3. Better housekeeping methods are reflected in the increased pride in their operation shown by warehouse personnel. This, in turn, has boosted the efficiency pattern.

4. Improved storage methods and better utilization of space has enabled the organization to provide better protection for all of its stocks. Some of the material which previously had to be stored out of doors because of the lack of space, has been moved into the warehouse. In addition, the reduced number of handlings has resulted in a lower breakage ratio.

5. The warehouse safety has improved immeasurably. This, again, is attributed to the reduced number of handlings per item, and to the better housekeeping.

6. Inventory control has been made easier.

The entire warehousing and handling problem arose out of the post-war change in economic and production conditions. During the Korean conflict and World War II, farm implements were in extremely short supply. All of the firm's output, therefore, was shipped out immediately upon coming off the production line.

After the war, when production caught up with and sometimes passed the demand, it created a storage problem. Once scarce items again filled every available foot of floor space in the company warehouse. Unfortunately, the post-war warehousing program was instituted without advance planning.

When it became obvious that the warehouse could hold no more stock, and that the disorderly system was costing the firm time as well as money, management came up with the unit-pallet idea.

The system is based on the principle that one machine in its entirety, or the same machine in several disassembled parts, can be handled and stored on a single pallet. The remaining attachments, parts, tools, etc., are packed around the machinery.

In using the unit-pallet method, the company found that it pays to adhere to the following four basic rules:

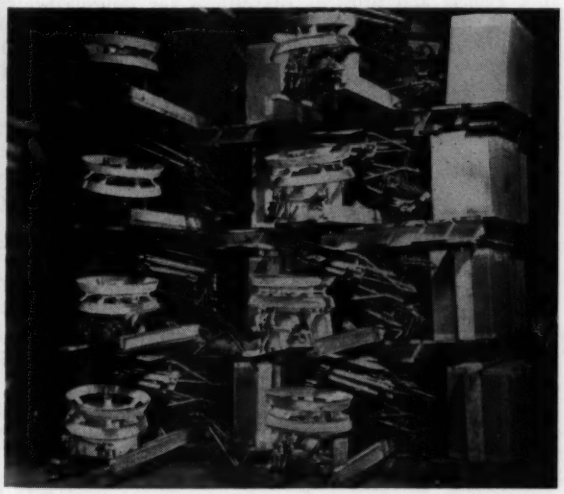
1. Make certain that every pallet load has at least four good bearing points, preferably at each corner.

2. Select bearing point parts that can withstand the weight of pallet loads piled up to six high. The strong parts used as bearing points serve as protection for the weaker parts on the same pallet.

3. Wherever possible, use a flat piece on the top of each pallet load.

4. Never make a pallet load heavier than the load capacity of the materials handling equipment in use; and never pile pallets higher than they can conveniently be unstacked and moved. •

Palletized planters, with their attachments, are easily accessible from the front of storage bay by fork truck



Before the new system was installed, pallets were used in this section, but poor planning limited their usefulness

By T. W. O'Neill
Director of Claims
Geo. F. Alger Co., Detroit, Mich.

A Positive Freight Handling Program

By transforming its passive claims prevention program into an active better handling program, and by personalizing its approach, this carrier was able to substantially reduce its loss ratio

LAST year, as a result of the freight handling program placed in operation by the George F. Alger Co., Detroit, Mich., 99.63 per cent of all shipments were made without payment of claims.

The company believes the reason for this claims payment reduction has been the positive and personal approach to good freight handling, including proper planning and personalizing for handling personnel.

The entire program is administered by the director of claims from the Detroit office and includes our 15 terminals covering a four-state area. Each terminal manager is responsible for application of the program, which is designed to influence drivers, check-off men, dock foremen, terminal managers, dispatchers, freight handlers, etc.

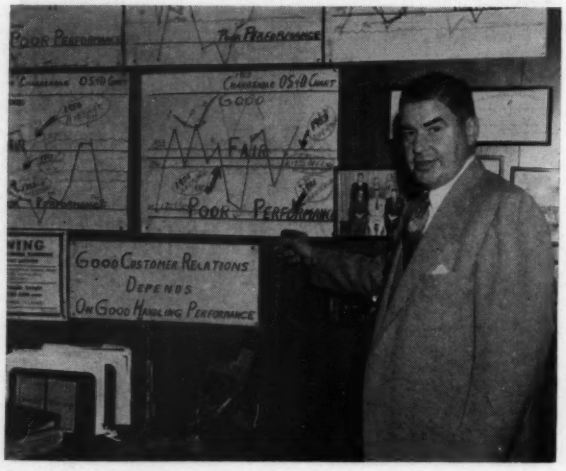
Fleet operators always have fought OS&D's as a matter of good business. The Alger Co. has waged an organized battle for the last 12 years. However, due to a personalized and positive handling program, our strategy has undergone a change for the better. The success of the plan hinges upon a constant selling of its objectives; a day-by-day drive that never is finished.

The mechanics of the program were devised and then applied directly to the employees, with the hope that they would be interested in cooperating. Results have been encouraging.

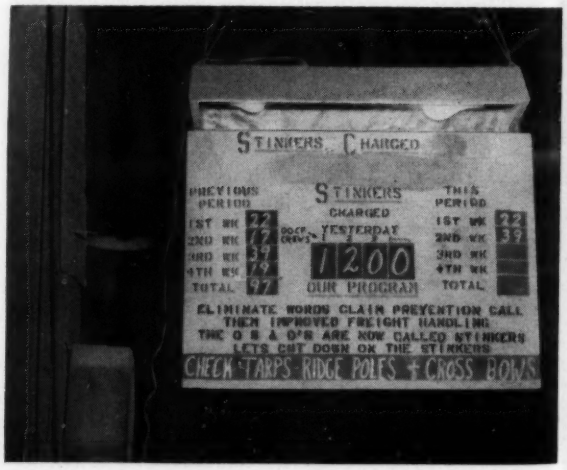
The company assumed in planning the operation, that the difference between a good and bad program is people. Generally speaking, one carrier can have the same physical facilities as another. Therefore, it must be the manner in which the employees use these tools that makes or breaks an OS&D program.

To get our freight handlers to assume a personal interest we had to approach them from a personal angle. Administration of a positive program required a selling campaign. First, to convice management the program required a

Performance chart on troublesome terminals helps keep track of progress. Heavy line represents normal ratio



Stinker Board for each terminal tells the OS&D story at a glance, and provides suggestions for improvements



Top to bottom: Chargeable OS&D form, with letters in left column representing terminals; second half of same form, showing chargeable OS&D ratio; form letter sent to isolated or troublesome terminals, and examples of unloading tally and shipping form

special executive plus specialized departmental activities. Secondly, to prove to the Claims Dept. that claims prevention was their major job, with settlement of claims a secondary role.

Finally, we endeavored to get the personnel to stop thinking of the program in terms of "claims prevention," but to consider it a "good handling performance" program. By adopting this new title we removed the matter of claims prevention from the Claims Dept., and placed it in the laps of the handling personnel, with the result that they began to consider good freight handling a personal concern; and our OS&D's started to decline.

Instruction by Example

The company minimized the use of films, posters and manuals, considering the use of such mediums entirely too broad in scope in that they implied a criticism of the entire terminal personnel. For example, the good freight handler as well as the indifferent handler was being criticized, which was something the good man would be apt to resent. Now we get much better results by having terminal managers show the indifferent handler the correct manner of handling freight. As terminal managers report directly to us, we in the claims office can take a personal interest in the indifferent handler.

The Claims Dept. will discuss with anyone, at any time, suggestions for improving freight handling methods, with the consequence that we have had many helpful suggestions from the freight handlers. Where feasible, we cement better management-employee relations by granting small concessions to our freight handlers. These usually result in better production.

The company is interested in the effectiveness of our new freight handling program; we believe the handlers are too. Thus, for the first time, through the use of "Stinker" boards found on the dock of every terminal, we inform handlers as to the progress of the program.

We call our OS&D's stinkers, and every stinker is recorded on the stinker board for all to see. We use the opprobrious term stinker because it has a deeper, more personal meaning for handlers than the term OS&D.

The top of the board reads "Stinkers Charged." The board is columned so that all handling personnel can see the stinker record for the previous period and compare this with the number of stinkers made during the current period. A day-by-day report on the stinkers made also is included.

The left-hand column on the board is composed of five spaces, one for each week of the previous period. The number of stinkers made during a particular

(*Please Turn to Page* 72)

CHARGEABLE OS&D'S FOR THE 1ST PERIOD 1954-55

TERMINALS	Misloads				Improper Handling						Defective Equipment							
	SHORT	WRONG TRLR	FRT W/O BILLS	BILLS W/O FRT	POOR STOWING	LACK DUNNAGE	CARELESS HANDLING	IMPROPER USE OF EQUIPMENT	INADEQUATE FICILITIES	PILFERAGE	BILLING	BAD TARPS	HOLES IN TRLR	BAD DOORS	NAILS IN TRLR	BAD CHAIN GATES OR BAD TARPS	PERIOD TOTAL	Y-D TOTAL
A	6	7	14	2	1	1	4			3	7	2	1				48	48
B	4	9	12	4	1		2					1					33	33
C	2		4														6	6
D																	0	0
E	4		9	10	7		27	2			3	2	2				66	66
F																	0	0
G																	0	0
H	2										1						3	3
I			2	1									1				4	4
TOT.	18	16	41	17	9	1	33	2		3	11	5	4				160	160
%	11.3	10.0	25.6	10.6	5.6	0.6	20.6	1.3		1.8	6.9	3.1	2.5					

	No. of Shipt's		Chargeable Ratio Per 1000		Issued		Outbd OS&D'S Charged	% Outbd
	PD	Y-D	PD	Y-D	PD	Y-D		
A	9815	9815	4.89	4.89	57	57	36	75%
B	3110	3110	10.61	10.61	42	42	30	91%
C	3160	3160	1.89	1.89	50	50	6	100%
D	668	668	0	0	12	12	0	0
E	10552	10552	6.25	6.25	181	181	21	32%
F	817	817	0	0	14	14	0	0
G	1024	1024	0	0	29	29	0	0
H	994	994	3.01	3.01	28	28	2	67%
I	1020	1020	3.92	3.92	11	11	4	100%
J	569	569	0	0	20	20	0	0
TOTALS	31729	31729	5.04	5.04	444	444	99	62%

Chargeable OS&D'S 36% of total issued for the 1st Period

K	24
L	1
M	18
TOTAL	43
GRAND TOTAL	31772

TO: DATE

CC:

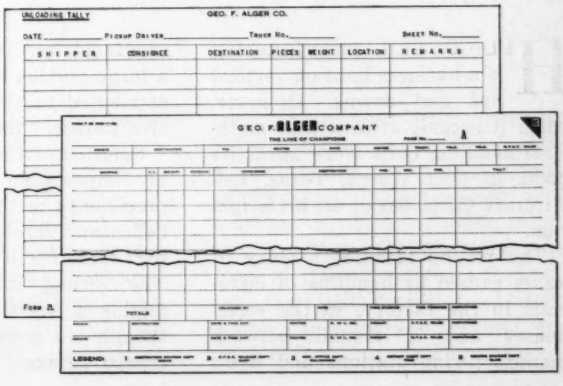
Here's Something that should be corrected at your terminal:

1. WHAT'S WRONG:

2. WE SUGGEST:

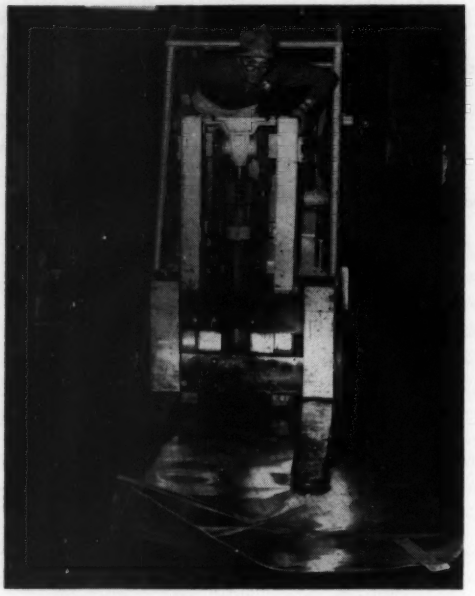
3. WHAT CORRECTIVE ACTION HAVE YOU TAKEN?

(Signature)



Condition of a box or container should be checked before moving. Parts should be properly packed to avoid damage

Improper stacking is a common cause of unnecessary damage to parts, as well as creating a personnel injury hazard



Driver stops too late to avoid running over expensive metal left on floor by careless handler

Willie Works Wonders in Handling

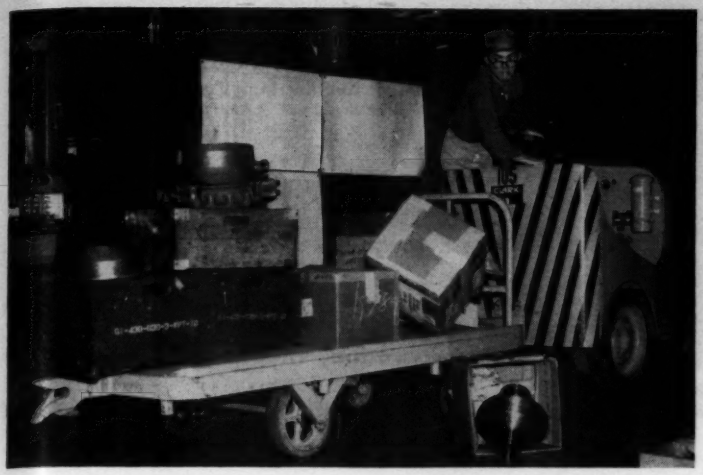
Comic character increases production and

HELICOPTER manufacturing is a business built on vertical ups and downs. However, when it became evident that materials handling costs were up at its plant in Fort Worth, Texas, Bell Aircraft Corp. began an investigation.

The results revealed a story of losses caused by handling of materials in the factory, in the warehouses and in transit between manufacturing stations and Bell's two factories. It also revealed that a large portion of the loss could be attributed to the more-or-less elusive phrase, "the human element."

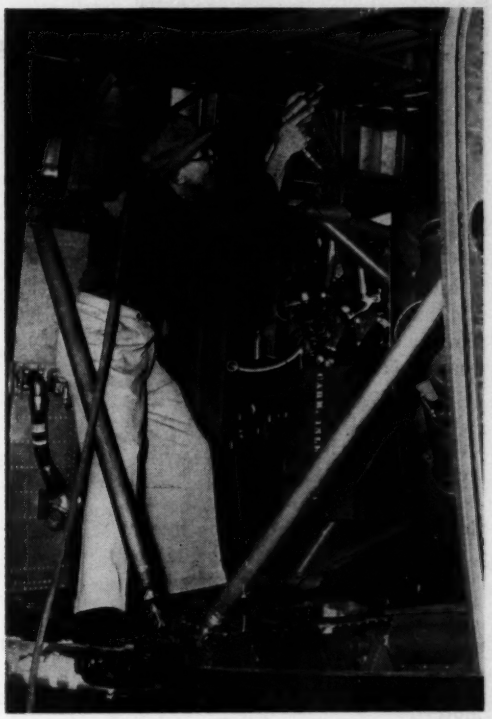
Solution of the problem was doubly important. First, the highly-precisioned materials handled were delicate; a scratch on a precisioned part could result in additional costs. The second important need for finding a solution was that even though we were lucky enough to escape damage in handling, there still was another chance of loss. Careless or inexpert handling and the lack of proper packing and packaging also could result in serious damage to the parts.

The Bell Co. moved its helicopter division to Texas three years ago, transferring only 370 employees from Buffalo, New York. The remainder of the work force—now up to more than 4,000—has been made up of persons from the local labor market who had no previous heli-



An example of how not to stack a trailer. Parts which tumble to the floor increase costs based on repair and replacement

All parts should be laboratory-tested and passed by inspectors before they are used



The lack of common sense principles is evident as careless worker drills above open carburetor

reduces damage cost by 50 per cent in handling

copter manufacturing experience.

The situation demanded immediate corrective action. The solution, Bell officials decided, was effective education. They developed methods that apparently are braking loss and stepping up production, as well as increasing employee morale and interest.

Two methods were chosen. One was based on a comprehensive training course for the 2,800 manufacturing employees; the other on a week-to-week personalized housecleaning drive.

Enter "Willie"

The Bell Co. Training Dept., feeling that most Americans have a weakness for comic characters, created one—Willie Q. Knucklehead.

An original slide film entitled, "Don't Be A Willie," was developed. A training dept. instructor —for purposes of his role—became a slow-moving, slow-thinking, lackadaisical individual, possessed with a unique capability of doing things wrong. Photographers made pictures of Willie's activities throughout the Bell facilities at Fort Worth. Interspersed between pic-

(*Please Turn to Page* 88)

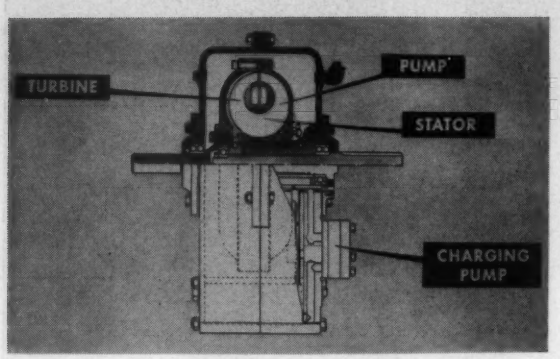


Fig. 1: This cross section shows the relative positions of the main components of the torque converter

By P. L. Fosburg
Manager of Engineering, Torque Converters
Westinghouse Electric Corp.

Where a torque converter is properly used, it should result in improved performance, ease of operation, and, in general, economy of operation based on the work performed

Torque Converters in

A TORQUE converter may be defined in several ways, depending on whether you think of it in terms of function, application, or precise description. It can be called an automatic compensator for changes in output torque demand. A more precise description might term it an infinitely variable torque amplifier.

In terms of application, it is a device to permit the prime mover to deliver essentially constant horsepower at constant speed for maximum efficiency of the input drive. Finally, classically defined, it is a hydraulic analogue of an electrical generator and electrical motor.

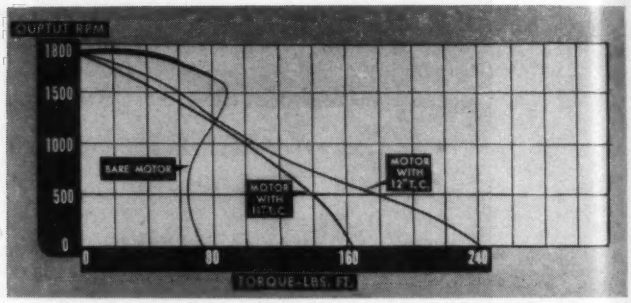


Fig. 2: A 15-hp performance curve with the bare motor, an 11-in. converter (160 lb-ft) and a 12-in. converter (80 lb-ft)

How it works

A torque consists principally of three basic elements: Pump, turbine, and reaction member, as shown in Fig. 1. The centrifugal pump converts the mechanical energy of the driving engine or motor into kinetic energy in the fluid being circulated. This fluid then enters the turbine wheel and gives up its energy in the form of torque and rotation.

As the fluid leaves the turbine, it enters the reaction member where the direction of flow is reversed so that the oil, with its unexpended energy, enters the pump in the same direction as its rotation. If this reaction member were not present, the direction of fluid emerging from the turbine would be in a direction to oppose the action of the pump and would prevent the multiplication of torque.

At the stall condition, when the output member is stationary, the energy in the fluid impinging upon the turbine is converted into torque. As the turbine starts to move, this torque decreases until such time as the turbine approaches the same rotational speed as the pump wheel. As the speed of both pump and turbine approach synchronization, the torque multiplication decreases to unity and we then have the equivalent of a fluid clutch or flywheel.

When this condition occurs, the blades of the reaction member are in such a position as to obstruct the flow of oil. This would result in a sharp decrease of torque and efficiency if no corrective measures were taken. When this oc-

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Editor's Note: Mr. Fosburg's remarks are excerpted from a paper presented at the Fifth Biennial Materials Handling Conference, sponsored by the Westinghouse Corp. at Columbus, Ohio, earlier this year.

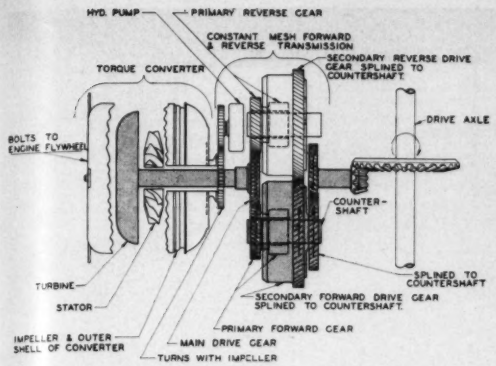


Fig. 5: Cross section of Clark Equipment Co.'s hydratork drive used on gasoline powered trucks

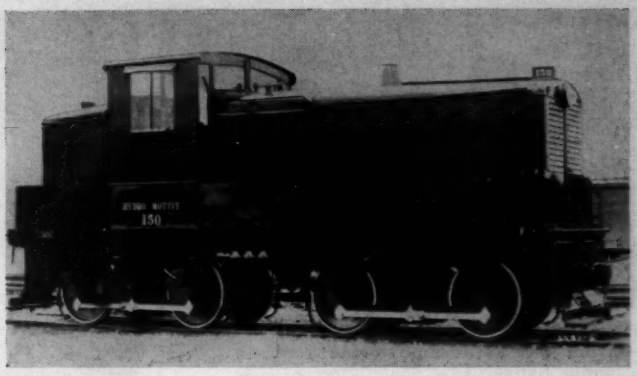


Fig. 6: Locomotives, particularly switching engines such as this, lend themselves readily to torque converter application

Materials Handling

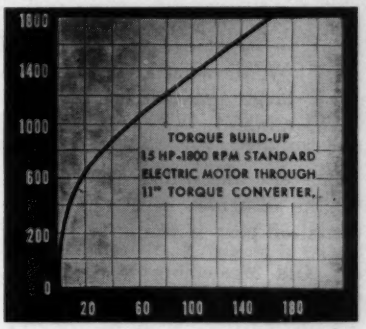


Fig. 4: This size is a good choice for heavy-inertia, hard-to-start load

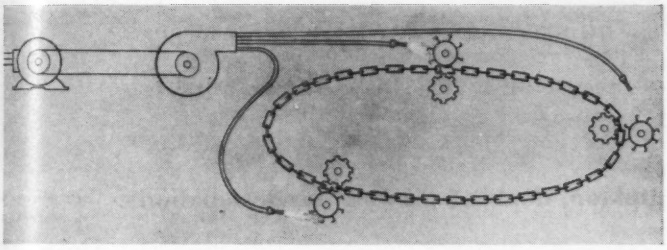


Fig. 3. The converter can be used to equalize loads between two or more prime movers. When one unit tends to speed up it tries to assume more than its share of the load. Due to fluid drive, however, it cannot pull the other unit, as in the case of direct mechanical drive. Eventually the units assume equal loads and work as a team

curs, we permit the reaction member to free wheel in order to get it out of the way of the fluid flow so that the fluid may pass unimpeded through the hydraulic circuit.

The hydraulic circuit is completely enclosed and sufficient charging pressure is provided by a separate pump to assure that the circuit is completely full of oil at all times. This is done to prevent cavitation. Since the input and output torque are different, this difference must be balanced by a reactive force.

This reactive force is provided by having the reaction member fastened to the external housing. Provisions for cooling the oil are made. This can be done within the unit or externally through a separate heat exchanger.

Proper matching of the torque converter to the prime mover (electric motor or internal combustion engine) is not only an important aspect in the application of this device to a specific problem, but also gives a good insight into both performance and operating characteristics of the torque converter. Different diameters of converters have somewhat different characteristics at the output shaft when applied to the same prime mover.

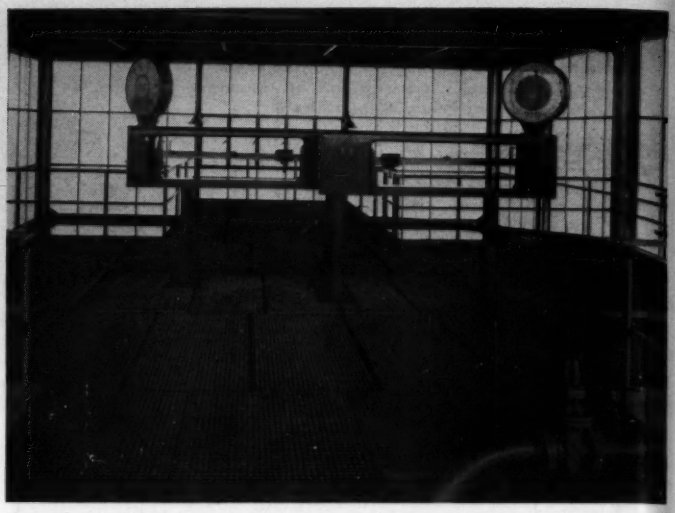
Typical speed torque curves of a 15-hp, 1,800-rpm standard squirrel cage motor, the same motor with an 11-in. single-stage torque converter, and again with a 12-in. converter applied to it are shown in Fig. 2.

The starting torque on the standard motor is approximately 74 lb-ft. This reduces somewhat as the speed increases until the output reaches 110 rpm. The pull-out torque on the motor reaches 90 lb-ft at a speed of 1,500 rpm, and the full-load torque of 45 lb-ft is reached at 1,745 rpm.

When the input shaft of an 11-in. torque converter is directly connected to this motor, the speed torque characteristics at the converter output shaft can be shown by the dotted line in Fig. 2. The dashed line shows the performance through a 12-in. diameter torque converter. Points A and B on the motor curve represent the speed and torque of the motor when the output shaft of the converter is stalled (Point A being

(*Please Turn to Page* 80)

View of the private railroad siding serving the Rotterdam storage yard



This delicately balanced lever system in the weighing apparatus is easily operated by one man. Dials indicate quantity in either tank

The ultimate need for more accurate means of measuring expensive edible and mineral oils recently led to construction of this 200-ton, double-tank weighing installation

Dutch Develop New

HOW to accurately measure large quantities of bulk mineral and vegetable oil has long been a problem facing importers and exporters as well as the distributors at the continental oil port of Rotterdam.

Old Measuring Methods

Previously, not only in Rotterdam but throughout the world, the recognized method of measuring bulk oil involved as the first step the judging of the depth of oil in shore tanks. Then, by means of tables of capacities, specific gravities, and temperatures, the correct quantities could be found to a certain degree.

This system involves the correct measurement of volume, and its conversion to weight by multiplying the volume by the relative specific gravity of the oil.

To accurately measure the volume, it normally requires that oil be allowed to settle in a shore tank for a period of at least 24 hours. This, however, is not always possible, since measurement often is made either aboard ship or in tank lighters. Thus, whenever the oil is being measured on discharge from ship to lighter, there is a risk that the quantities determined by this means are far from correct. This is true whether the inside or outside method of measuring delivery to the lighter is used.

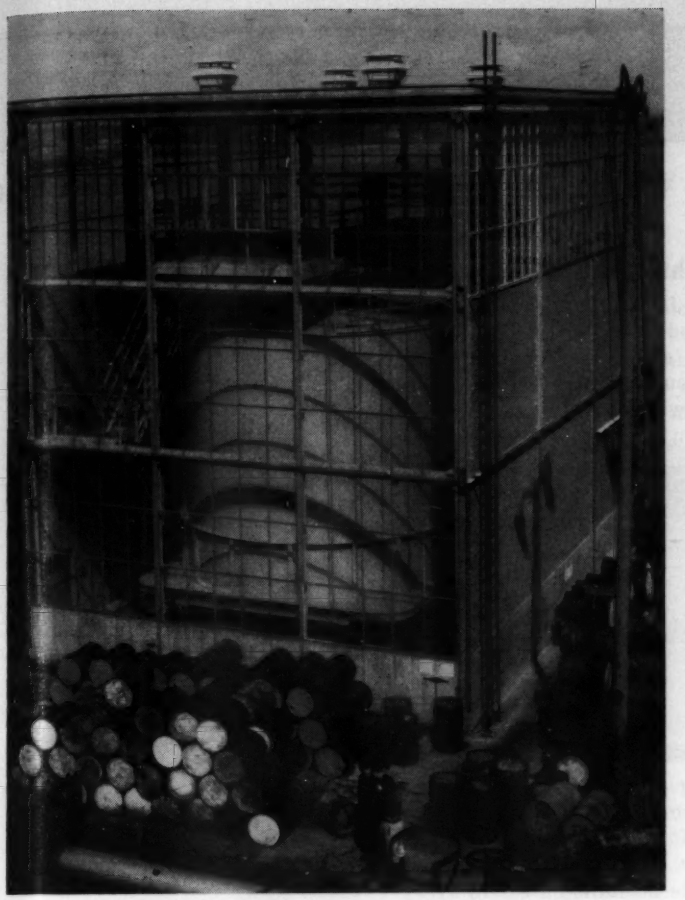
Discrepancy Factors

Among the several uncontrollable factors to be taken into consideration when inside tank measurements are used, is the thick layer of froth which usually forms on the oil in the lighter's tanks due to the agitation set up by pumping.

When the outside displacement method of measuring is used, difficulties arise from the continual shifting of hoses, men and material on and off the lighter. Also, the fuel tanks of the lighter itself must be accurately judged. In both cases, there is the natural movement of the oil to and fro as the small lighters rise and fall on a busy river.

Other factors which might lead to discrepancy include the possibility of the gages not being dead central, the presence of some water in the bottom of the tank, expansion due to change of temperature, and the difficulty of ascertaining the exact volume of the heating pipes in the tanks.

It also is difficult to check the quantities of oil left in the tanks



New glass enclosed, double-tank, 200-ton weighing installation is claimed to be the largest of its kind and first of its type in Europe

Oil Weighing Unit

By John Grindrod
DA European Correspondent

of both tankers and lighters after discharge.

The need for more accurate means of measuring expensive edible and mineral oils led the Rotterdam firm of Pakhuismeesteren to have constructed a 200-ton tank-weighing installation, which is claimed to be the first of its kind and the largest weighing installation in Europe.

The Pakhuismeesteren firm operates as a warehouse and tank storage owner, sworn weigher, forwarding agent, ship broker, agent, tanker and dry cargo charterer, etc.

Enclosed in a vast glass house, the weighing installation was designed by Van Berkel's Patent, Ltd., Dutch weighbridge specialists, to the individual requirements of Pakhuismeesteren. It is situated on the River Maas/Rhine at the entrance to the oil harbor.

Composed of two tanks, each of 100-ton capacity, this double weighing installation was tested by weights and measures officials of the Dutch government for a period of from three to four weeks before it went into operation.

A certificate was issued showing a maximum deviation of only three pounds on 100 tons. In contrast to this, the law permits a deviation of 130 lb on 100 tons.

Both steamers and tankers can be discharged with very little slackening of the normal rate. Approximately 1,200 tons of oil can be pumped into the installation over a 10-hour period. Vessels alongside any one of the numerous jetties can discharge, via the weighbridge, to lighter or shore tank. Loading operations can be similarly effected.

Modern Features

Approximately 4,000 sq ft of glass and 40 tons of steel were used in construction of the giant installation. Each shock-absorbing tank has a net weight of 11 tons, and is mounted on steel balls, each of which can bear a weight of some 15 tons.

The delicately balanced, new-type lever system is easily operated, and special dials make it possible for the operator to determine the exact quantity in either tank during the filling stage. The final weights are read off the lever arms and stamped on cards.

Weighing is carried on continuously as one tank is weighed while the other tank is being pumped full or empty.

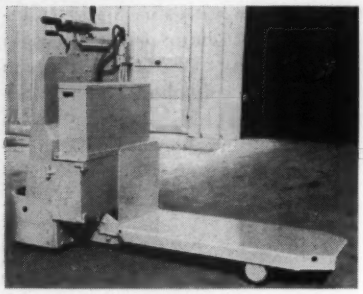
During the short time the weighbridge has been in operation it has proved to be of considerable value to the Pakhuismeesteren organization. It has met with wide acclaim, and the industry has quickly taken advantage of the service, which offers faster operation and a greater degree of accuracy.•

DA NEW PRODUCTS

. . . . FOR FURTHER INFORMATION PLEASE

Narrow Load Handling

For handling exceptionally narrow loads weighing as much as two tons, this electric-driven Transveyor truck with a platform just 20 in. wide, has been built

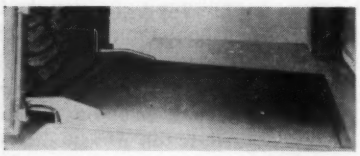


by the **Automatic Transportation Co.** The unit is equipped with a self-balancing feature which, it is claimed, automatically compensates for uneven floor surfaces, and eliminates frame distortion.

Circle 25 on Card Facing Page 53

20,000-lb Capacity

A hydraulically-operated, 20,000-lb-capacity, adjustable loading dock, Model No. 4 A.F., now is being manufactured by **Rowe Methods, Inc.** An automatic safety device and self-leveling action



compensate for varying heights of freight carrier beds, plus carrier spring deflection during freight transfer. The unit is available with stationary or retractable arms. Standard width is six ft.

Circle 26 on Card Facing Page 53

Weight Calculator

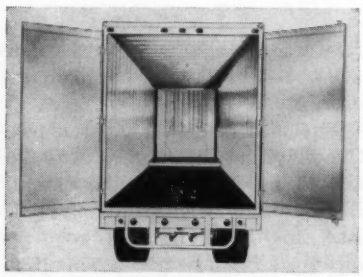
The **J. W. Decker Co.**, has introduced a new case rate-load weight calculator. It is claimed the calculator, in a matter of seconds, will compute the freight costs on a per case basis for de-

livering any type merchandise from shipping point to destination. It also will compute the number of cases it will take to complete a minimum car or truck load shipment on any quantity up to 1,500 cases or 90,000 lb on any case of merchandise weighing up to 60 lb.

Circle 27 on Card Facing Page 53

New Van Series

A standard production dry freight Volume Van, Series 4,000, recently has been announced by the **Fruehauf Trailer Co.** The trailer is claimed to carry extra

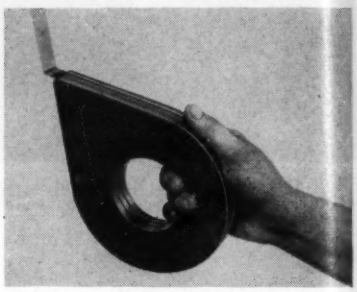


payload amounting to 35 per cent above the average now hauled by truckers. It has a capacity of 2,200 cu ft. The new van is basically a 35-ft, lube-free tandem with aluminum corrugated panel drop frame body, with sliding type underconstruction providing 13 positions for the tandem axle in six-in. increments from 51 to 123 in. from rear bumper. It is 93 in. wide inside with extra inside height and length.

Circle 28 on Card Facing Page 53

One-Hand Dispenser

A new, one-hand dispenser for all pressure-sensitive tapes, has been developed by **GorDag Industries, Inc.** The Tape Rite can be used wherever masking, sealing or joining tape is required. Tape

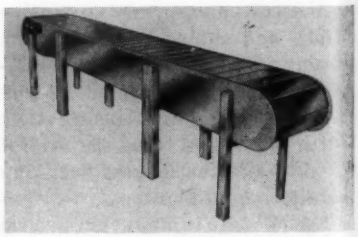


pays out the applicator and is firmly attached to the job surface by a steel finger, which cuts the tape. Tape cannot be twisted or snarled. The unit will accommodate tape ¾ in. or one in. wide with a standard three-in. core.

Circle 29 on Card Facing Page 53

All Aluminum Conveyor

A new pre-fabricated, all aluminum conveyor has been manufac-



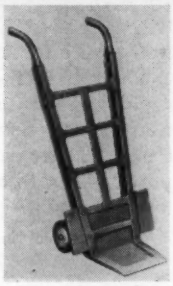
tured by the **Mercury Industries, Inc.** The unit's sagless and vi-

brationless belt-plate top will handle and convey parts at variable speeds up to 100 ft a minute in either direction. Each foot of belt is supported by eight or more rollers. Belts are available in widths from six to 96 in., and in lengths up to 175 ft or more.

Circle 30 on Card Facing Page 53

New Design Feature

The **American Pulley Co.**, recently announced that 17 sizes and models of hand trucks, formerly of bolted construction, will now be manufactured as complete welded units. Wheel size and axle locations have been changed in some models, providing better balanced, easier-rolling trucks, and making it possible to "break" loaded trucks with little effort. In addition, these trucks are equipped with pressed steel noses for greater strength with less weight.



Circle 31 on Card Facing Page 53

Small-Size Wardrobe

A new small-size wardrobe, specially designed to store and ship suits and jackets, has been announced by **Chippewa Paper Products Co., Inc.** The Jiffy-Midget measures 24x22x40 in., and can be easily stacked in vans and warehouses. No tools are needed to assemble the two-piece unit. Features include a steel hanger bar with tabs every five in. The unit is dust-proof, air-tight and moth-tight. Available in plain or in special colors, and printed in one or two colors.

Circle 32 on Card Facing Page 53

Load Holder Device

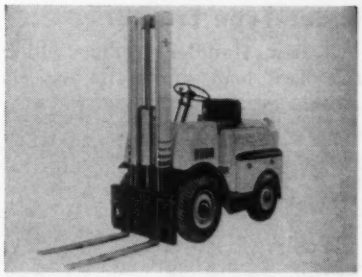
A new Load Holder unit, designed for the freight hauling industry, has been presented by the **Load Holder Co.** When articles are loaded or unloaded, the rods

are placed to hold any load or partial load firmly in place at all times. The rods are spring extruded and easily placed in any desired position. The recesses (not complete perforations) may be imposed in plywood, steel or aluminum.

Circle 33 on Card Facing Page 53

Pneumatic Lift Truck

The Buda Div., Allis-Chalmers Mfg. Co. announces a new addition to its line of FT series fork lift trucks. The new model, FTP30-24, has a lifting capacity



of 3,000 lb at 24-in. load center and is equipped with pneumatic tires. It is available with either diesel, gasoline, or LP-gas engines, and can be equipped with torque converter transmission as optional equipment. Unit turns in 72-in. intersecting aisles if equipped with single wheels, or in 78-in. aisles if fitted with dual wheels. Large diameter cushion tires are available for operation over rough, uneven surfaces.

Circle 34 on Card Facing Page 53

Floor Repair Product

A new, easy-to-use floor repair material that is reputed to be capable of withstanding heaviest traffic immediately after application, is announced by **Maintenance, Inc.** A feature of the prod-

uct is a three-step application for resurfacing which consists of priming, filling, and tamping or rolling. At ⅜-in. thickness, coverage is over 200 sq ft to a 55-gal drum. The resurfacing and patching material is available in five-gal pails, 30-, and 55-gal drums.

Circle 35 on Card Facing Page 53

Masking Tape

A new black crepe paper masking tape now is available from the **Permacel Tape Corp.** Constructed with a transparent adhesive and semi-glass, flattened crepe backing, Permacel 717 is designed for all-purpose use. The heat-resistant adhesive holds at normal or forced drying oven temperatures and releases without adhesive transfer on removal from the job. Its masking range is from 50 to 240 deg F.

Circle 36 on Card Facing Page 53

NEW PRODUCTS and EQUIPMENT

CONTINUED FROM PREVIOUS PAGE

3,000-lb Unit

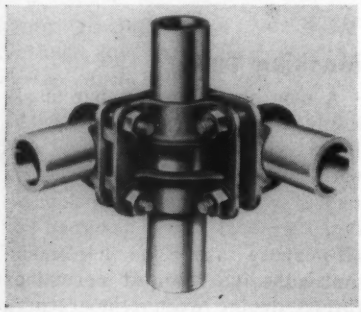
A new, 3,000-lb gas-electric truck, Model FD-30, has been introduced by **Baker-Raulang Co.** Features include a foot-pedal-operated electrical inching control

which permits high speed hoisting at low travel speeds. Gear shifting also is eliminated. Full-load lifting speed is 40 fpm. Total lift height is 130 in. The power axle has a single-reduction worm gear drive. Speed is controlled by a metering valve.

Circle 37 on Card Facing Page 53

Tubular Rack Clamp

The Tube-Strut clamp provides an economical method of constructing storage and utility racks, according to **Tubular Structures Corp of America.** Struc-

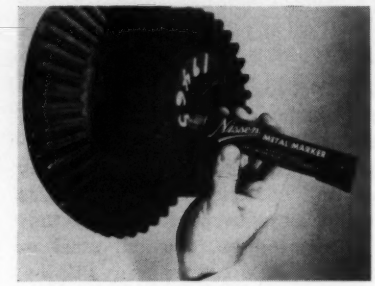


tures for any requirements are quickly erected using standard tubing or pipe with the clamp system without threading or welding and without skilled help, special tools, etc. The coupler performs all structural functions in a single unit. Sizes and shapes of racks are tailored to meet any requirement.

Circle 38 on Card Facing Page 53

Ball Point Marker

A fast-drying, permanent marking ink in an improved, handy package-applicator, is offered by **John P. Nissen, Jr. Co.** The marking ink will not readily chip, peel

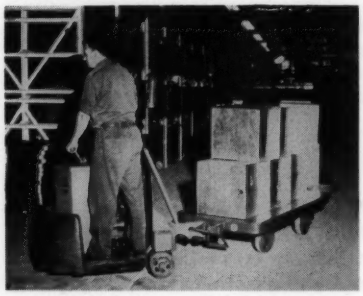


or be affected by heat or weathering, and it is packaged in a burstproof tube fitted with a smooth acting ball point. Different size ball points and seven standard colors are available with the marker.

Circle 39 on Card Facing Page 53

Rider-Type Tractor

A new Handler tractor which can haul loads up to 15 tons, is

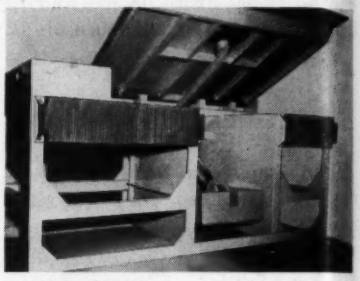


being introduced by **The Colson Corp.** A simple coupling device facilitates hooking to all types of truck and hauling equipment. The power unit is floated on a shock mount designed for easy removal and servicing. A 40-in. turning radius provides narrow aisle operation. Overall width of this 1,500-lb unit is 29 in., and length, without the coupler, is 45 in.

Circle 40 on Card Facing Page 53

Rubber Dock Bumpers

The new rubber dock bumpers, manufactured by the **Karl A. Herman Co.**, are designed and built to replace wood bumpers. The units



won't splinter or scrub off, and the rubber facing provides enough spring reflex to compensate for the up and down motion of the truck. There are no sharp exposed edges to mar the truck bed or body.

Circle 41 on Card Facing Page 53

Multi-Purpose Clamp

A new hydraulic clamp with rotator and side shifter, has been developed by **The Yale & Towne Mfg. Co.** The new device is claimed

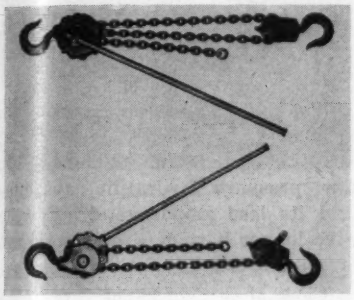
to eliminate the need for several attachments where different box handling assignments pose a problem, and easily handles crates, capped cartons and regular car-

tons in a great range of sizes. The distance between the bottom forks and the top plate can be adjusted from 26 to 76 in. Loads handled with the clamp can be lifted to the full truck fork height in any position. Attachment has a lifting capacity of 1,000 lb, and a rotating capacity of 500 lb.

Circle 42 on Card Facing Page 53

Ratchet Lever Hoist

Two light coil chain ratchet lever hoists have been introduced by **Coffing Hoist Div., Duff-Norton Co.** The units are models L-1-½

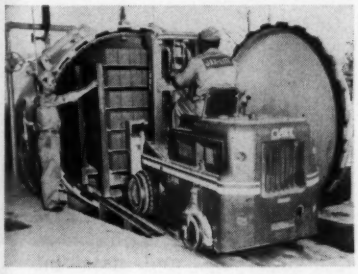


(capacity: 1½ tons) and LD-3 (capacity: 3 tons). The hoists are made either in malleable iron or aluminum alloy and feature compactness and light-weight construction.

Circle 43 on Card Facing Page 53

Rail-Traveling Truck

Flanged wheels fixed to a regular fork truck permit it to travel on autoclave rails. Two pairs of steel flanged wheels have been rigged to this **Clark Equipment Co.** truck. Front flanged wheels

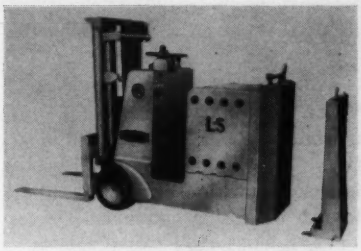


are bolted to the regular wheels. Rear flanged wheels are supported in a "U" block which is bolted to the fork truck frame in direct alignment with the regular wheels. Flanged wheels clear floor by several inches when truck is traveling in normal manner.

Circle 44 on Card Facing Page 53

Counterweight Feature

Lewis-Shepard Products, Inc., announces a new, versatile electric fork truck in 2,000 and 4,000-lb capacities. The counterweight at the rear of the truck can be quickly and easily removed. When

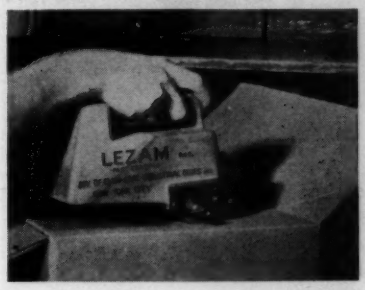


the counterweight is installed the truck has a capacity of 4,000 lb at 48-in. load length. When the counterweight is removed the truck has a capacity of 2,000 lb at 48-in. load length. A stand which can be lagged to the floor can be furnished with the truck to hold the counterweight.

Circle 45 on Card Facing Page 53

Carton Sealer

The new Lezam gluer, manufactured by **Ever-Seal Industrial Glues, Inc.,** is claimed to seal cartons more securely than gummed tape or staples, and the cartons



are neater in appearance and safer in transit. Using low-cost liquid glue, it can dispense the adhesive in an even coat to any size area. Light-weight, portable unit weighs approximately five lb when filled with one qt of adhesive.

Circle 46 on Card Facing Page 53

IH Introduces New S-Line Series of Trucks

Circle 47 on Card Facing Page 53

A new line of International trucks that combines new design with power and durability has been announced by the motor truck division of the **International Harvester Co.**

Designated the S-line, the new models include a wide and complete range of four and six-wheel gasoline and LPG-powered motor trucks ranging in gross vehicle weight rating from 4,200 to 33,000 lb.

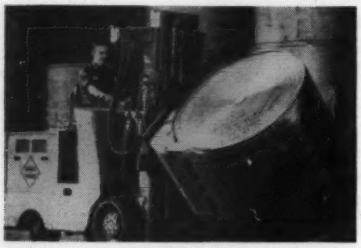
S-line models range from the light-duty S-100 series through the heavy-duty S-180 series. The line includes a wide range of pickup, panel, stake, and multi-stop delivery models with factory-mounted, added-capacity bodies; farm trucks, Roadliner truck-tractors, and other conventional chassis models for medium and heavy-duty hauling requirements in general or specialized fields; five cab-forward models; fire truck, school bus, and four and six-wheel Loadstar dump-truck chassis; and three four-wheel-drive models.

DA NEW PRODUCTS and EQUIPMENT

CONTINUED FROM PREVIOUS PAGE

Paper Roll Handling

A rotating clamp for roll paper, claimed to feature the largest stroke ever designed, has been developed by **The Elwell-Parker Electric Co.** The attachment pro-

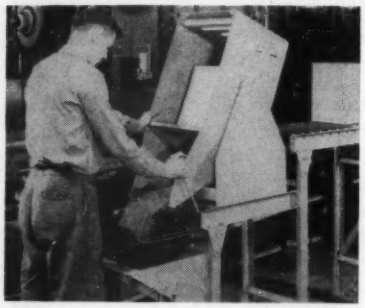


vides extra large capacity, a stroke capable of handling rolls of paper with diameters ranging from 12 to 51 in., and the ability to pick up loads in either a horizontal or vertical position and rotate them as required.

Circle 48 on Card Facing Page 53

New Type Loader

The Chas. Wm. Doepke Mfg. Co., Inc., announced the availability of the new NesTier Rollover Loader. Designed to speed and simplify the transfer of small parts from cumbersome shipping boxes or

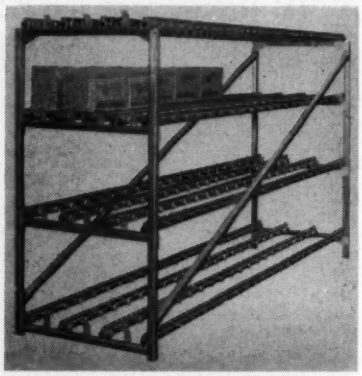


kegs to easily handled in-plant containers, the new unit is claimed to eliminate manual operations, reduce loss or damage, and facilitate inventory control. Control lever permits measured flow of parts into boxes, bins, etc. When contents are emptied, unit is rotated back to the load position. Available as an accessory is a stand which contains a short length of roller conveyor.

Circle 49 on Card Facing Page 53

Order Selecting Unit

An improved, live-storage rack recently has been introduced by the **M-H Standard Co.** Operating on the gravity flow principle, Versarack stores a variety of different sized packages in an easily accessible, first in, first out sequence. Horizontal structural

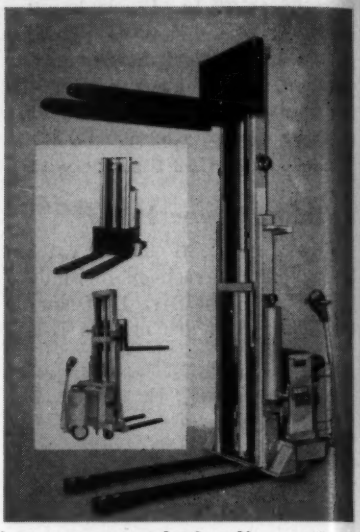


members are equipped with free rolling ball bearing wheels to support the packages in rows. Packages loaded into the rear of the rack roll forward up to a stop at the front. The unit will handle all flat bottomed items, packages, tote boxes and palletized material. Completely conveyorized systems can be furnished.

Circle 50 on Card Facing Page 53

High Lift Unit

Lift Trucks, Inc., have announced their newest hydroelectric unit, Model KHTP. The new unit is a high lift pallet—or as sometimes called—nesting fork truck. It is available in the following capacities—2, 3, and 4,000 lb, and has lifts up to 130 in. The truck has roller type masts and

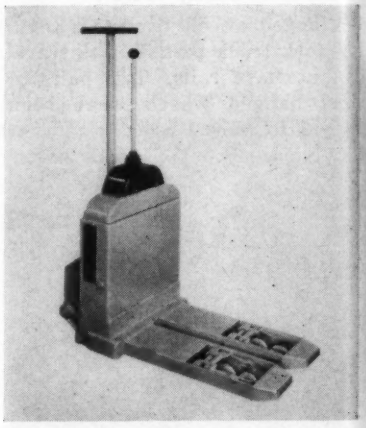


low pressure hydraulic system, and its less amperage draw will give longer battery life as well as ample power.

Circle 51 on Card Facing Page 53

Pallet Truck

This new Tin-plate truck, manufactured by the **Market Forge Co.,** features tandem articulated rear wheels for use with single-face pallets having either two or three runners. The truck is free



of underframe, and uses interchangeable parts. Unit has 360 deg continuous turning front wheels with pulling handle in vertical position. It is available in capacities up to 5,000 lb, with an overload guarantee of 20 per cent, and can be furnished with forks of practically any length.

Circle 52 on Card Facing Page 53

Improved Design

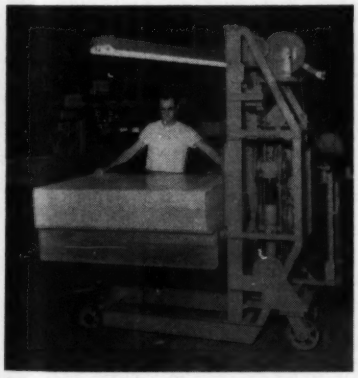
The **Acme Steel Co.**, announces the addition of a new improvement to its line of Dexion slotted angle framing material. The new design—"225-80"—can be used interchangeable with the firm's origi-

nal type of slotted angle. It is made from cold rolled steel with an electro-galvanized finish. The slotted angle is 100 per cent reusable and provides for quick and easy assembly. Panels and casters also are available for use in connection with slotted angle.

Circle 53 on Card Facing Page 53

Portable Elevator

A new portable electric elevator for handling skidloads of paper and other products recently was announced by **West Bend Equipment Corp.** To simplify paper handling, the platform can be raised



or lowered so that the sheets can be slid onto the table, or off, as required. The unit has a fork type platform to fit beneath skids. Capacities range from 500 to 5,000 lb. Roller bearing wheels and auto-type steering permit easy mobility and positioning.

Circle 54 on Card Facing Page 53

LP-Gas Tractor

Mercury Mfg. Co., recently introduced an LP-gas tractor. Installed on Model A-460, the LP-gas installation is claimed to offer many advantages, including long engine life and savings in maintenance costs. All standard units required for conversion have been incorporated in the design of the LP-gas system.

Circle 55 on Card Facing Page 53

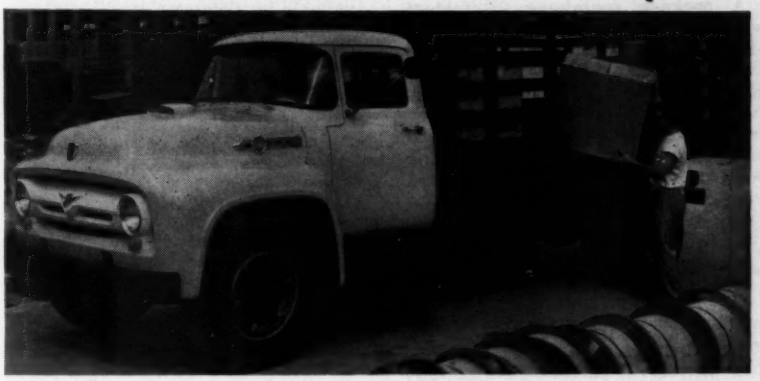
Exhaust System

HiDuty lift trucks equipped to use LP-gas and use Catalytic exhaust, are a new development of the **Transitier Truck Co.** Catalytic exhaust systems combined with

LP-gas eliminates carbon monoxide gas fumes entirely. Plants, factories and warehouses without normal ventilation now can use gas-operated lift trucks without fear of trouble from fumes.

Circle 56 on Card Facing Page 53

Ford's 1956 Models Feature Added Horsepower



Circle 57 on Card Facing Page 53

Ford's 200 new 1956 truck models, with greater engine performance and payload capacity, went on display late in September. Two new models have been added to the Ford line—a T-750 tandem axle model in the heavy truck series, and a new, longer wheelbase pick-up. Gross vehicle weights extend from 5,000 lb on the pick-up to 42,000 lb on the heavy-duty tandem axle models.

Ford's cab design introduces increased visibility of wrap-around windshields and optional wrap-around rear windows. Introduced are two standard safety features —a safety steering wheel and safety door latches. Seat belts are optional.

Horsepower has been increased in all engines, by 12.7 per cent in the smallest 223-cu in. six-cylinder engine rated at 133 hp, to 17.6 per cent in the largest 332-cu in. heavy-duty Y-8 engine rated at 200 hp when equipped with a four barrel carburetor.

In the medium-heavy truck series, a special heavy-duty 168-hp Y-8 engine is available equipped with a four-barrel carburetor. In the heavy truck series, an optional power package consists of four-barrel carburetion, dual exhausts and special cold air intake.

FREE LITERATURE

Truck Selection Guide

A new kind of industrial equipment analysis guide and rating table similar to job and personnel rating techniques has been introduced by **Hyster Co.** for comparison and selection of fork lift trucks. The plan, known as "How to Select a Lift Truck," is based on user evaluation of job requirements and truck features by points with a chart and analysis guide. Thirty-six lift truck features are listed for comparison under the following headings: Performance, Ease of Operation, Durability, Serviceability and Appearance.

Circle 58 on Card Facing Page 53

Case Study File

A package containing 25 folders which describe in detail applications of materials handling equipment is available from **Lewis-Shepard Products, Inc.** Among the many industries covered in these folders are: Motor freight, chemical warehousing, food processing, paper, bottling, furniture, paint, rubber.

Circle 59 on Card Facing Page 53

LP-Gas Cost Study

Reports of both operational and maintenance savings with liquefied petroleum gas fuel fork lift trucks are outlined in a brochure released by **Towmotor Corp.** Schematic drawings and photo diagrams—of particular interest to technical-minded readers—document the operation and engineering of LP-Gas fuel systems.

Circle 60 on Card Facing Page 53

Two-Way Radio in Handling

A low-power industrial two-way radio system designed for the requirements of materials-handling vehicles is described in a booklet published by **Radio Corporation of America.** Known as Carfone-150, the new system incorporates both mobile units and base station equipment, with three-watt input, for operation over the entire 148-to-174 megacycle band. It is intended for two-way communication between a central dispatch point and fork lifts, straddle trucks, towing tractors, yard cranes, etc.

Circle 61 on Card Facing Page 53

Refrigerated Warehousing

A new pamphlet, illustrating how frozen food manufacturers, meat packers, fresh fruit and vegetable dealers, super markets and other large volume storers of perishable foods can realize more operating capital, lower storage costs, insurance savings, loans on commodities, etc., by using the facilities of public refrigerated warehouses, has just been published by the **National Association of Refrigerated Warehouses.**

Circle 62 on Card Facing Page 53

Free Packaging Tool

Much of the guesswork is removed from certain phases of industrial packaging through a mathematic tool made available by **Celotex Corp.** The Cushioning Nomogram, which will be sent free to readers on request, tells a shipper the exact thickness of Celotex cushioning material required for a specific shipment.

Circle 63 on Card Facing Page 53

Aluminum in Trucking

Truck operators now can compute the profit available through the use of aluminum trailers, bodies and wheels by consulting the new "weight-rate-profit" chart published by **Aluminum Co of America.** By using such known factors as the weight saved with aluminum trucks or trailers, plus the average rate for cargo carried and the number of trips per year, chart users can compute their yearly extra profits. To assist in converting volume measure into weight, the chart lists the volume weight ratio of such commodities as gasoline, coal, sand, milk, flour, cement, sugar and wheat.

Circle 64 on Card Facing Page 53

For prompt service, use postage-free postcard provided to obtain FREE LITERATURE and NEW PRODUCT information described in this issue. All material is FREE unless otherwise noted.

Install-It-Yourself

Lamson Corp. announces the release of a new conveyor catalog. It is a facts book to be used for laying out a conveyor system using the new Lamson pre-engineered "Install-It-Yourself" units. The catalog contains a general description of the uses and applications of the various components. There is included a method of analyzing loads as to weight distributions and grades, followed by a brief description and charts of the "when and where" to use various types of wheel and roller gravity, belt and live roll conveyors.

Circle 65 on Card Facing Page 53

Magnesium Hand Trucks

Magline Inc., manufacturers of lightweight magnesium hand trucks, offers a new bulletin that provides complete information about the company's line. In addition to specifications and technical data, the literature introduces a new hand truck selection plan, which tells the user how he can custom design a Magliner hand truck to meet his exact job requirements.

Circle 66 on Card Facing Page 53

Unitized Steel Shelving

The Borroughs Mfg. Co. has published a new 32-page catalog on its unitized flexi steel shelving. The catalog describes Borroughs' exclusive construction and installation features, illustrates 24 of its many different units, and offers detailed information on how to plan a steel shelving layout.

Circle 67 on Card Facing Page 53

Hydraulic Carton Clamp

A hydraulic clamp attachment designed to handle a variety of loads without the use of pallets or skids is detailed in a new Truck Engineering Bulletin available from **The Elwell-Parker Electric Co.** The clamp eliminates time normally required to palletize loads, facilitates the more effective utilization of available storage area, and eliminates the problem of loading and unloading pallets when material is received or shipped in such a manner. Also, the usual investment in pallets or skids can be reduced.

Circle 68 on Card Facing Page 53

Round Steel Strapping

Manufacturers who ship products weighing up to 100 lb may be interested in a new brochure published by **Gerrard Steel Strapping Div., United States Steel Corp.** It illustrates the division's model Q semi-automatic round steel strapping machine. The brochure illustrates various uses of the machine ranging from the strapping of corrugated cartons and dimension stock to newspapers and welding rods.

Circle 69 on Card Facing Page 53

Battery Performance

Additional material is available on storage battery selection, charging, handling, maintenance, inspection and testing for industrial trucks in the Plus-Performance Plan offered by **Gould-National Batteries, Inc.** The material includes a collection of the articles, specifications, charts, record systems, manuals and bulletins which make up the Plan.

Circle 70 on Card Facing Page 53

Warehousing Data

North Pier Terminal, in Chicago, has issued a new folder called "Find Out," which lists nine ways to reduce costs and enlarge volume through use of North Pier facilities. The folder gives a brief description of the warehousing, distribution, office, and other services offered by the firm.

Circle 71 on Card Facing Page 53

Stand-Up Straddle Truck

A light-weight, low-cost hydraulic lift truck, designed for moving materials anywhere throughout a multi-story building, is described in a folder published by the **John Morrell Mfg. Co.** The morLift is a powered, stand-up, rider-type, straddle-type lift truck. Model TM 84 has a maximum lift of 84 in., and model TM 120 has a 120-in. lift. Both models have a capacity of 100-2000 lb.

Circle 72 on Card Facing Page 53

Monomast Lift Truck

Operating advantages of their new Monomast lift truck, the single-mast design with panoramic visibility, are illustrated in a catalog published by **Hyster Co.** Available in both 3- and 4000-lb capacities, the Monomast was designed for work-productivity, visibility, strength and safety. Photographs in the catalog show unobstructed vision to the load and forks resulting in faster, safer work-output with driver fatigue at a minimum. Stability of the mast or upright is claimed to be greater than conventional assemblies. Load lifting speed is 58 fpm.

Circle 73 on Card Facing Page 53

Impact Measurement

The **Impact-O-Graph Corp.** has released a four-page folder describing its various models of impact measuring instruments. The folder also lists a number of examples of uses of the instrument in connection with packaging, transportation, preventive maintenance, and quality control.

Circle 74 on Card Facing Page 53

BOOKS

Piggy-Back Routing Guide

DISTRIBUTION AGE has published a comprehensive "DA Piggy-Back Routing Guide." The Guide, first of its type ever published, lists all of the major shipping points in this country between which trailer-on-flatcar service is available.

Each major point is listed alphabetically in a "From" column. A keyed "To" column tells to which other major points piggy-back is available from the originating city. A "Route Code" column, also keyed, lists the participating railroads, tells what type service is available (i.e., railroad trailers only, motor common carrier trailers, or combination) and gives certain rate information.

Thus, the traffic manager, or shipper, can tell at a glance whether or not TOFC is available between any two or more shipping points in which he is particularly interested. Some 157 major points are listed, and more than 450 additional minor points are represented. Also included are the names and addresses of the 32 railroads offering the service.

The Guide is priced at 35¢ a copy, and may be obtained by writing **DISTRIBUTION AGE,** Chestnut & 56th Sts., Philadelphia 39, Pa.

Air Transportation

"Commercial Air Transportation," by John H. Frederick, has been published in its 4th edition. This standard book on air transportation by Dr. Frederick, DA's transportation consultant, has been thoroughly revised, brought up to date, and expanded to keep pace with the rapid strides made by the air transportation industry in recent years. As in previous editions, the last of which was published in 1951, the book offers a complete survey of commercial air transportation in the United States and covers thoroughly the uses of air transport and the problems faced by the airlines. One of the outstanding features of this book is that it provides an economic analysis of the entire air transportation industry. **R. D. Irwin, Inc.,** Homewood, Ill. $6.

Solve Loading Problems

Solutions to 13 difficult dock loading and yard loading problems are outlined in a folder released by **Magnesium Co. of America.** In each of the 13 cases, a line drawing is used to illustrate the problem, and an actual photo is used to show how the problem was solved by a Magcoa magnesium dockboard or yard ramp. Problems solved in the folder include loading rail cars at a low-dock, moving wide loads through narrow refrigerator car door openings, car-to-car loading, and loading from ground level into rail cars and trailers.

Circle 75 on Card Facing Page 53

Industrial Development

Parkway Terminal, a planned industrial development which will accommodate a community of warehousing and light manufacturing concerns, is outlined in a booklet produced by **Parkway Terminal Co.** Just three miles from Pittsburgh's Golden Triangle, the single-structure development offers office and plant area, parking facilities, utilities, transportation facilities, and a number of special features.

Circle 76 on Card Facing Page 53

Bulk Shipping and Storing

A new concept of bulk handling, shipping, and storing, as it applies to flowable dry materials, is introduced in a pamphlet published by **United States Rubber Co.** The "closed" materials handling method utilizes U. S. Sealdbin containers. Built of synthetic rubber and tire cord fabric, the container is non-corrosive, vermin-proof, moisture-proof, and tamper-proof.

Circle 77 on Card Facing Page 53

Conveyors and Tubes

Catalog No. 309, issued by **Standard Conveyor Co.,** shows more than one hundred pictures of conveyor and pneumatic tube installations and conveyor units in various types of industries. Industry applications covered include food and beverage, docks and wharves, warehouses, textile mills, chemicals, etc.

Circle 78 on Card Facing Page 53

Prize Winning Essays

The Operations Council, ATA, has announced winners of the essay contest sponsored by **M-H Equipment Co.** Entitled "Our Experience With Four-Wheel Carts," the papers deal with application of the carts, either manually operated or in connection with overhead or underfloor drag systems, with illustrated case histories. The five winning essays are available in booklet form.

Circle 79 on Card Facing Page 53

Above: Tetley's new $1 million tea packing plant located in Savannah, Ga.

Left: Modern bagging machines set up on an assembly line basis are equipped to turn out 1½ million bags in a single eight-hour working day

Tea Party With a 1½ Million Ba

By C. E. Wright
DA Southeastern Correspondent

FOR THE past several years tea imports in this country have been on a sharp upswing. In 1953, imports reached 105 million lb—an 11 per cent gain over the previous year. The 1952 gain was 12 per cent over the 1951 figure.

With the mounting imports, dealers have experienced the usual growing pains in the area of physical distribution—including processing, packaging, storing, and shipping. Tea being a semi-perishable item, a certain degree of speed and care are required in the handling operation.

Most of our tea is imported from India and Ceylon. Before it reaches the retail market it must be channeled through one of the many packing houses located in or near principal ports of entry throughout the United States.

1½ Million Bags Daily

One of the most recent additions to this fleet of packing houses is the $1 million plant of Tetley Tea Co., Inc., in Savannah, Ga. The Tetley installation, which packages up to 1½ million individual tea bags in a single daily shift, is located adjacent to the transit sheds of the Savannah State Docks and Warehouses, a state owned and operated shipping and warehousing facility.

Tea packed in the gardens of the Far East, all clearly marked as to origin and type, is received at the packing plant in chests of 80 to 160 lb.

Handling Operation

The chests are opened (a new type mechanical opener is being tested) and the bulk tea is dumped onto an inclined conveyor, which carries it to a raised platform six ft above floor level. From there it goes into the hoppers of a vibrating conveyor screen.

The tea rides on the perforated screen in order that all foreign objects may be removed. After falling off the vibrating screen, the tea is conveyed to the top of a mixing drum. In the drum as many as 25 to 30 types of tea, carefully selected as to quantities and qualities, are blended to obtain a uniform and satisfactory product.

The blending operation presents one of the most intricate problems, requiring an expert knowledge of the particular qualities of tea from every garden in the world. From a shipment of 1,600 chests, as many as 70 to 100 samples are taken. Sampling for taste is done at least once a day, and often two or three times a day, both before and after mixing.

From the mixing drum the tea moves by bucket elevator to a conveyor mounted along the roof. This conveyor, equipped with an endless rubberized belt with a curved tray, operates over a distance of 160 ft.

Being mounted on a trolley, the conveyor can be run in either direction. It carries the tea to special tanks which, in turn, feed the bagging machines.

Packing and Storing

In packaging and storing tea, the product's tendency to mold in excessive dampness and to pick up odors from other products, particularly soap and kerosene, demands special attention.

To protect the quality, all packages are shipped in lined cartons, with a cellophane overwrap. Every package is dated, to protect the

Tea, being a semi-perishable product, requires care and speed in handling — Tetley Tea Co., in its new Georgia packing house, has perfected an automated processing and packaging system producing up to 1½ million bags daily

Bag Quota

consumer. Approximately one year is the maximum storage time for tea before deterioration sets in. The tea packers have established a practice of taking back old stock and selling it to chemical firms for the extraction of tannin and caffeine.

Distribution and Consumption

Shipments from the Tetley plant in Savannah are made largely by truck, with occasional shipments to the New England area going by seatrain.

Tetley's new Savannah plant was built for the distribution of tea to the South, Southwest, and Midwest. Some shipments are made, however, out of this area, particularly to the Northeast.

The Tea Council of the United States attributes the increased imports, and increased consumption, to three factors: The recent rise in coffee prices, our increasing population, and the industry's own advertising program.

Whatever the cause, the Council explains that importers are gearing their plants to handle the increased volume. Mechanization, including conveyorization, faster and more efficient packaging machinery, and other materials handling improvements are doing the job. •

Operator connects suit to storage battery in truck before entering freezer

Heated 'Space' Suits Increase Freezer Handling

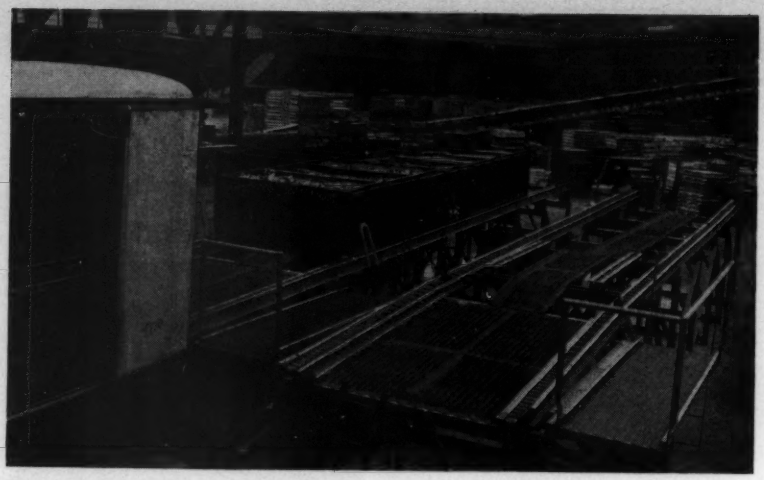
Heated by current from storage battery in fork-lift trucks, 'space' suits enable operators to perform more efficiently 15 deg F below zero

SPACE suits are now helping fork-lift truck operators to work longer periods in cold rooms. Users of battery-powered material handling equipment in low temperatures will be interested in this new idea to increase truck productivity.

At the Modesto Refrigerating Co., Modesto, Cal., fork truck drivers are outfitted with surplus government space suits, typical of those worn by crews of high flying aircraft.

The suits are electrically heated by current taken from battery-powered fork-lift trucks, which enable the drivers to work longer periods in cold storage rooms at temperatures of −15 deg F and colder. A rheostat permits adjustment of temperature inside the suit according to the desire of the individual operator. The suits take 100 watts at 24 volts. It is possible to plug in the coat, pants and shoes separately or as a unit.

After two recent plant expansions, Modesto has capacity to quick-freeze 235 ton of poultry, fruits and vegetables daily and capacity to store 10,000 ton under refrigeration. All the material is palletized and handled in and out of the cold room by sixteen battery-powered lift trucks. •



Free-standing conveyorized loading and unloading stations — standard racks of parts are placed on stations at convenience of the fork truck operator

Trucks with Built-In Roller Conveyors Speed Parts Handling

Ford conveyor system cuts dock-side time, uses fewer trucks, eliminates tie-up of fork trucks

Roller tracks on docks and on truck's bed permit parts racks to roll off truck and carried by fork truck to other points. Inset shows interior

CONVEYORS now are being used at nine of Ford's Detroit plants for fast handling of a wide variety of automotive parts. These parts normally are transported by company trucks from one plant to another in standard racks or standard skid bins.

By conveyorizing the truck loading and unloading operations where a large volume of such parts must be moved, Ford has discovered that time spent by trucks at dock-side is substantially reduced, fewer trailer trucks can handle a given quantity of material in the same time, and fork trucks are not tied up at both ends of the system in unproductive waiting.

Currently the system is handling over 3,400 tons of materials a day. A 30,000-lb load can be put aboard a trailer in ten minutes. As much as an hour and a half would be needed for loose-loading the same trailer.

Loading docks have roller conveyor tracks sloping two-degrees down to the edge, and truck ramps slope down at the same angle. Unloading docks and ramps are slanted oppositely. Truck and trailer beds are equipped with roller conveyor tracks the same size as those on the docks. Standard racks or bins are used for materials. Rack skid rails are attached flush with the feet, the same distance apart as the conveyor rails.

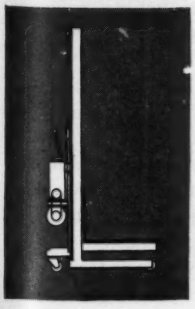
To prepare for loading, racks are placed one at a time or in tiers by fork truck on the roller conveyors. When dock and truck conveyor rails are matched the racks are allowed to roll into place in the truck. Locking devices on the truck's conveyor rails and sides prevent load shifting.

To unload, the racks are rolled onto dock-side conveyor rails for removal by fork truck. A hand-operated friction brake on dock conveyor rails slows racks as they roll out of trucks.

To insure matching with truck rails, end sections of dock conveyor rails are hinged and counterbalanced, and project several inches beyond the edge of the dock. When a truck backs into the dock, the dock rails can be raised or lowered and moved from side to side several inches to "lock up." •

REVOLVATOR
SINCE
1904

Shown at left is Uplifter loading high way truck.



Revolvator Uplifters:

1000 lb. capacity — platform length 24", platform width 24", lift 62".*

2000 lb. capacity — platform length 30", platform width 30", lift 65".*

REVOLVATOR UPLIFTER PORTABLE ELEVATORS

you benefit by over 50 years of experience

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Circle No. 9 on Card, Facing Page 53, for more information

Rafter-high storage, permitting utilization of valuable air rights, is made possible through use of lift truck

Side loading delivery truck receives full pallet load of beer, consisting of 42 cases, in single operation

Handling Costs Cut 50%, Space Saved 100%

Through inauguration of a fork truck-pallet program, this distributor also has raised his output 25 per cent, cut breakage 90 per cent

AN INTEGRATED materials handling system, featuring a single 2,000-lb-capacity fork truck and 8-way entry pallets, has resulted in substantial all-around savings at the O'Donnell Beer Distributing Co., in Elyria, Ohio.

The Savings

Listed among advantages of the new system are a 50 per cent cut in direct handling costs, a 25 per cent increase in the firm's output, a savings of storage space which totals 100 per cent, a 50 per cent reduction in loading time, and a 90 per cent reduction in loss through breakage.

Under the former method, cases of beer received from the brewery in truck-load lots were emptied by hand. The full cases then were moved into the warehouse and stacked, again by hand. Empties were returned to the brewery in a similar manner—one case at a time. The total handling per case under the old system actually came to 16.

In analyzing the old system it also was discovered that the snail-like loading and unloading procedures were costing the firm considerable in volume and potential. Not only were the valuable delivery trucks being tied up at the loading dock for undue lengths of time, but the driver-salesmen were wasting time which should have been used servicing old accounts and prospecting for new accounts.

The New System

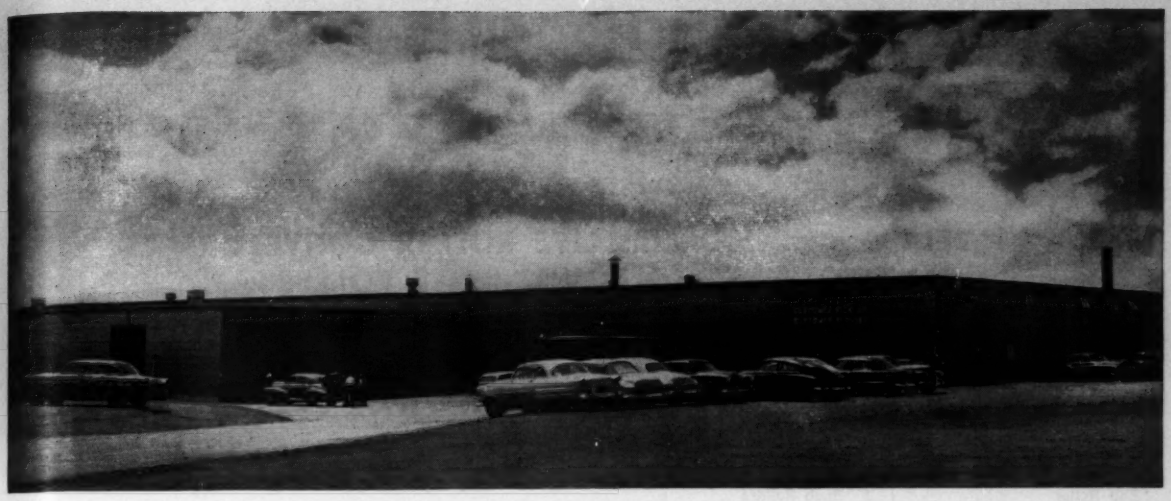
With the introduction of a fork truck-pallet method of moving both full and empty cases, one man operating the counter-balanced lift truck now can handle 42 cases at a time. The 8-way entry pallets further speed handling by permitting the fork truck to approach and lift the load from any one of four sides or corners.

Space Saving

Although the savings in direct handling costs are considered all-important, the O'Donnell firm feels that even more valuable is the 100 per cent saving in storage space.

Through use of the lift truck, high stacking is possible, which permits the utilization of previously wasted air rights. Without this space saving, the firm faced the possibility of having to erect additional warehouse facilities, at considerable cost.

Coupled with the handling and space features, the increased production, reduced breakage, and elimination of the cost consuming truck and driver down-time, permit "equal footing" operation in what the O'Donnell people call "a highly competitive business." •



Sears Roebuck Warehouse, Buffalo. *Contractor:* Santoro Construction Co. *Steel Fabricator:* Buffalo Structural Steel Co. *Architect:* G. Morton Wolfe, Buffalo.

HOW OPEN-WEB STEEL JOISTS CUT COST OF ROOFING SEARS' WAREHOUSE IN BUFFALO

Typical of many warehouses in which Bethlehem Open-Web Steel Joists are being used to advantage is the Sears Roebuck warehouse at 420 East Delaware Ave., Buffalo. This brick-and-concrete-block building, which supplies three retail outlets in the Buffalo area, measures 275 ft by 400 ft, with a railroad track along one 400 ft side. An attached garage houses a fleet of delivery trucks.

In the main building, 1800 Bethlehem Open-Web Steel Joists, 24 ft long, were used in the roof structure, providing storage space below separated by aisles 8 ft and 10 ft wide. The garage, measuring 60 ft by 150 ft, has a roof structure built with Bethlehem Longspan Joists, providing maximum column-free space where it is most needed.

Bethlehem Open-Web Steel Joists proved to be ideal in the construction of this building. They were simple to erect because they reached the job site completely fabricated, ready for placing. Pipes and conduits were run right through the open webs. Economies made possible by the use of open-web steel joists helped in keeping down the combined cost of the steel columns, all roof steel and the joists themselves, together with the finished roof, to a total of $1.04 per sq ft.

In addition to the cost-saving, the use of Bethlehem Open-Web Steel Joists in this warehouse provided fire-safety. These joists, in combination with concrete floor and poured roof, provided a fire-resistance of from one to four hours.

Main warehouse area has wide uncluttered aisles.

Garage has large areas of column-free space.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation.
Export Distributor: Bethlehem Steel Export Corporation

BETHLEHEM OPEN-WEB STEEL JOISTS

BETHLEHEM STEEL

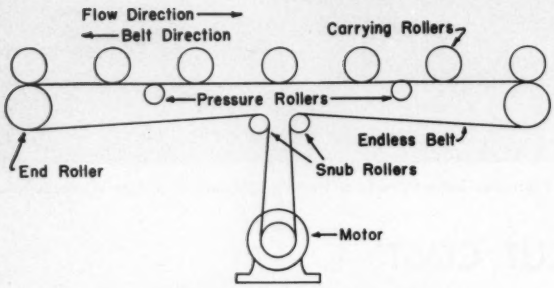
Circle No. 11 on Card, Facing Page 53, for more information

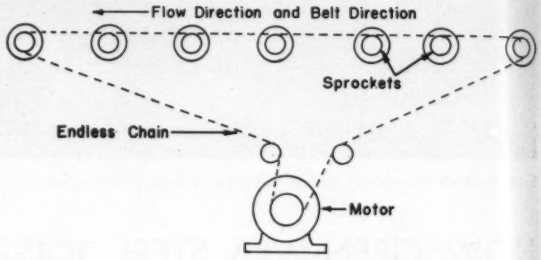
DA Materials Handling Primer—V

3-B-1. Belt & Chain Conveyors

By D. O. Haynes
DA Materials Handling Consultant

BELT & CHAIN-DRIVEN LIVE ROLLER CONVEYORS
TWO WAYS TO POWER-DRIVE ROLLERS





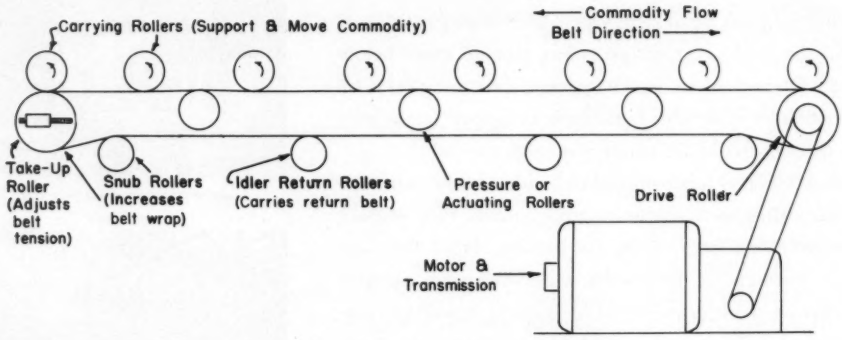
BELT-DRIVEN LIVE ROLLERS

A combination gravity roller and belt conveyor consisting of rollers actuated by means of an endless belt which runs against their under surfaces. The drive is not positive. When a package is stopped on the line, the powered rollers under the package cease to rotate but the other powered rollers remain live.

CHAIN-DRIVEN LIVE ROLLERS

A powered roller conveyor in which the rollers are actuated by means of an endless chain which drives either sprockets or gears attached to the ends of the rollers. The drive is positive, so that the rollers continue to rotate under a stopped package or other article being conveyored.

WORKING ELEMENTS—TYPICAL BELT-DRIVEN LIVE ROLLER CONVEYOR



GENERAL

Essential elements are: a source of power to actuate an endless belt, some means of keeping the belt properly stretched, the rollers themselves and a device for keeping the belt in contact with the rollers—all mounted in a frame which has proper supports.

Live roller conveyors utilize many of the parts found in gravity roller conveyors and in powered belt conveyors. How these elements are combined to develop live roller conveyors are covered here and references will be made to where belts, drives, transmission parts and similar commonly used elements of powered conveyors are discussed in detail.

BELTING

Both canvas and rubber friction-surface belts are used in these conveyors. Those who favor the latter point out that this type of belt has good friction qualities and with no compound to squeeze out and collect on the roller surfaces and, further, that it is not particularly affected by temperature and humidity conditions.

Regardless of the type of belt used, it must be so constructed that it has uniform thickness. Otherwise, it will not run true between the two sets of rollers.

The belt may be considerably narrower than the carrying rollers. This, of course, for economy reasons.

Fabric belts are described in the portion dealing with "Package Belt Conveyors."

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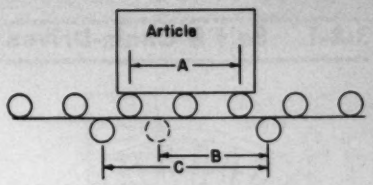
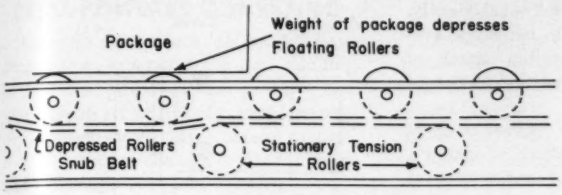
ROLLERS & SPACING

Carrying and pressure rollers are the same as those described for "Gravity Roller Conveyors."

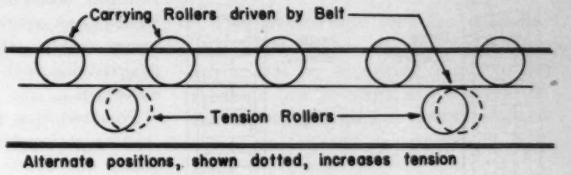
If all carrying rollers are to be actuated, the pressure rollers must be spaced as shown in B right. As a general rule, at least two rollers under the shortest package to be conveyed should be powered, as shown in C under an article with the length A.



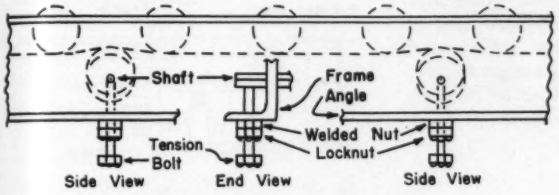
KEEPING UP THE PRESSURE



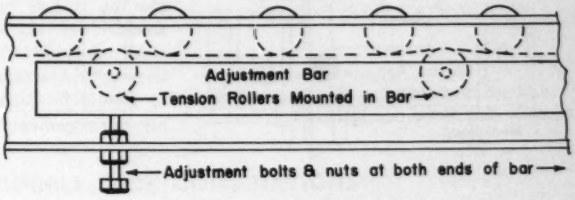
FLOATING ROLLERS



CONSTANT PRESSURE



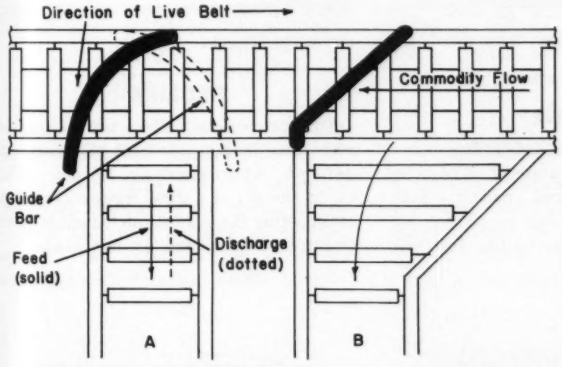
INDIVIDUAL ADJUSTMENT

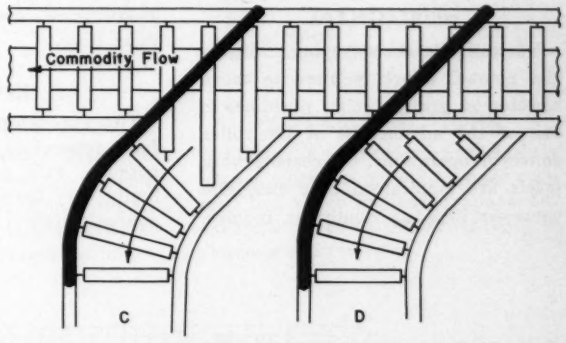


MULTIPLE ADJUSTMENT

The secret of proper pressure adjustment is to provide just enough pressure to insure rotation of the driven rollers when they are loaded, but, at the same time, not so great that these rollers cannot be kept from rotating with very little effort, as when packages are stopped on the line. Too much pressure results in excessive warping of the belt as it weaves between the two lines of rollers. Several of the methods for adjusting pressure are illustrated above.

TRANSFERRING—CONVERGING & DIVERGING





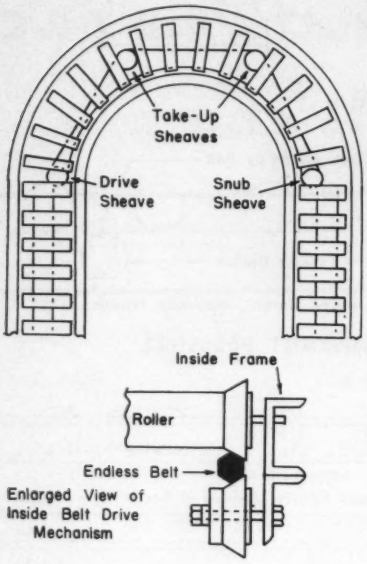
One of the outstanding advantages of live-roller conveyors is their ability to receive and discharge smooth-surfaced commodities from the side of the line. The materials handling engineer has a wide choice of standard and specialized contrivances which are used with live rollers for bringing together separate lines of commodities and for diverting from a single line to two lines.

The arrangements shown above do not by any means exhaust the possible combinations which can be worked out. For example, in A, commodities move on the powered rollers from right to left and are diverted to the gravity roller line, each package being assisted around the curve by the one following it. But, if the discharge conveyor also is powered, the packages will continue to be spaced as they proceed on their way. This set-up can be operated in the reverse. The powered main line will then pick up the packages from the spur.

Arrangements B, C and D also can be made for converging if they are built in reverse. Note particularly that the long driven rollers in C help in pushing the articles around the curve.

If arrangement B is built "double" it becomes reversible. Flow can then be in any direction from main line to the spur or the reverse.

Fully powered curves, actuated by belts, are described in detail below. They are not, however, usually recommended for reversible service.

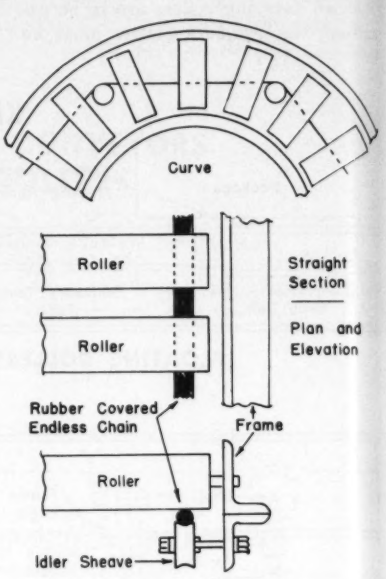


BELT-POWERED CURVES

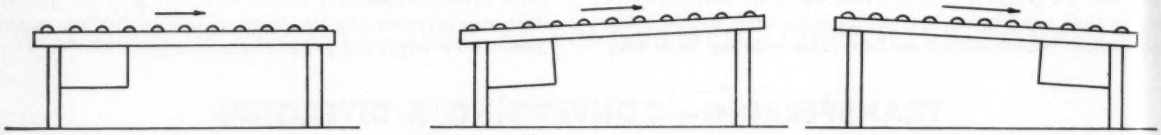
Gravity roller conveyor curves are "elevation eaters"—they require considerably more inclination than straight sections and consequently, where they are used in conveyor systems, shorten the possible length of gravity line without the restoration of elevation.

Powered live roller curves remove this objectionable feature of gravity roller conveying. They carry articles around curves without any required pitch.

Wide belts are not utilized to actuate the rollers on curves. Belts with small cross-section areas are kept in close contact with the rollers and thus actuates them. The manufacturer should be consulted as to whether his arrangement is reversible.



POSSIBLE PATHS OF TRAVEL



HORIZONTAL

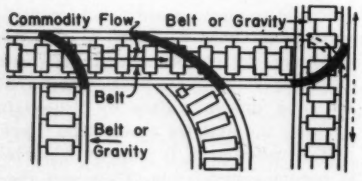
Perfectly level conveying, without the manual effort required to move articles on gravity roller pushlines is one of the advantages of live-roller conveyor operations. Convenient work levels are maintained over extensive conveyor lines as conditions require. There is no need for "boosters" in these lines.

INCLINE

The nature of the contacting surfaces determines the amount of incline possible with powered rollers. Top limits vary from 10 deg to 12 deg or approximately 1¾ in. to the foot of conveyor length.

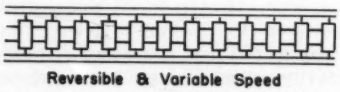
DECLINE

On declines the rollers act as brakes and thus help to control the rate of descent. Approximately 17 deg (2¼ in. to the ft) is a good figure to use in estimating the maximum possible declination. Pre-testing is advisable.



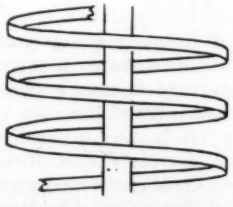
DIVERGING & CONVERGING

The ease with which commodities can be fed to and diverted from live rollers makes possible extremely flexible paths of travel. Practically any desired route can be provided.



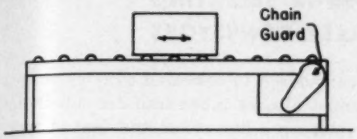
STRAIGHT LINE

Since the need for restoring elevation is eliminated with powered rollers, conveyors of this type are popular for moving materials through long mill buildings and between buildings.



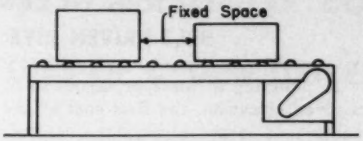
CURVES AND SPIRALS

The engineer has a choice of powered level or spiral curves. The latter provide the means of lowering or elevating commodities between floors on lines with low pitches.



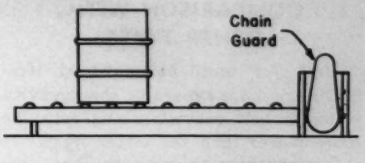
LEVEL POWERED CONVEYING

In such operations as assembling, inspecting, order-picking and packing it is often advantageous to have the work done on uniformly high conveyors with powered flow, instead of having to advance the materials by manual pushing.



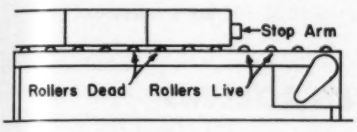
ARTICLES SPACED

Lines of mixed commodities offer no difficulties on powered rollers. Each item occupies its own exclusive place in the line and, since the entire line moves forward at a uniform speed there is no damage by "humping."



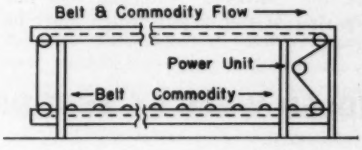
LOW SET CONVEYOR

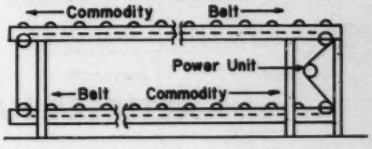
The power unit occupies considerable space under a live roller conveyor, but by mounting it above the machine low settings are possible. If the conveyor frame is countersunk in the floor the rollers can be at floor level.



ARTICLES STOPPED

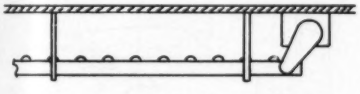
If excessive pressure builds up at stop points due to packages piling up on the line, introduce a section set at a slight pitch and space the driven rollers 5 ft or 10 ft apart. They act as brakes to packages coming into the pitched section but start the line rolling again when desired.





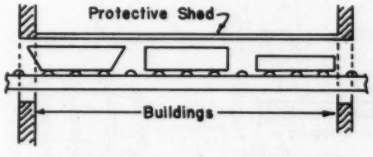
DOUBLE DECK COMBINATIONS

In many situations it is required that materials be fed to operators and the finished articles removed by conveyors. Double deck set-ups are frequently used for this purpose. The introduction of live rollers makes possible several different combinations. As illustrated above, the flow on the two lines can be in the same or in the opposite direction actuated by a single source of power.



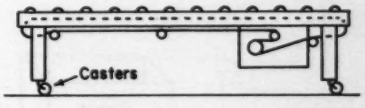
CEILING MOUNTED

Live roller conveyors can be ceiling mounted. They offer the unique advantage of not requiring any pitch, which means that overhead clearances are kept high above other traffic lanes.



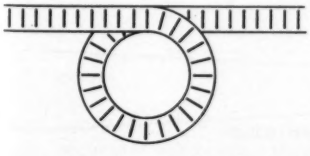
INTER-BUILDING FLOW

Another instance where level powered conveying is a solution to what would otherwise be an almost impossible situation. There is practically no limit to the length of overhead line.



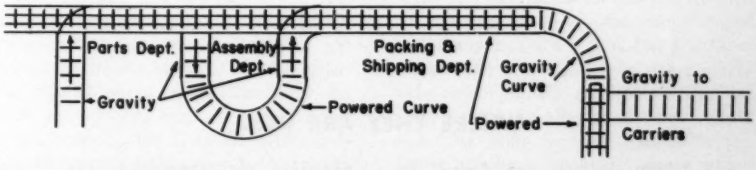
PORTABLE SECTIONS

All that is required are conveniently located electrical outlets to make castered live roller sections available for such operations as those carried on in shipping and receiving.



DOWN OR UP SPIRALS

A space-saving method for elevating or lowering fragile items or those which might tip over on steeper inclines.



BEST DESCRIPTION IS VERSATILITY PLUS FLEXIBILITY

Live roller conveyors are used alone or in combination with other types to make up complete conveying systems. Hinged sections are usually not powered—gravity rollers are put in where required. If it is not absolutely necessary to have powered curves it is more economical to use gravity.

COMPARISON WITH OTHER TYPES

Unit for unit, belt-powered live-roller are more expensive than gravity roller or belt conveyors and consume more power than the latter types.

Compared with gravity, the live type has the advantage of power—hence level lines, slight inclines and declines. The latter provides both controlled spacing and rate of descent.

They are more rugged, can stand more abuse from impact than belt types, and can handle articles which might damage the surface of a belt. They also are better adapted to side feed and discharge than the latter.

They lack the positive drive of chain actuated roller types.

FACTORS TO CONSIDER IN SELECTING BELT-DRIVEN LIVE ROLLER CONVEYORS

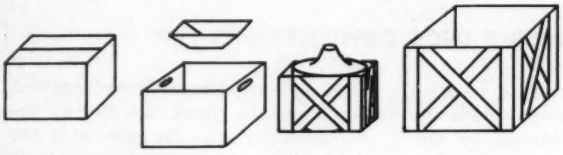
In planning a conveyor layout to fit a given situation, the first cost of the equipment is not always the controlling factor. The important points to consider are the operations to be performed. For instance, where level travel is a must, the extra cost of powered roller is justified.

On the other hand, if the use of declined sections is feasible, it would be extravagant not to use roller gravity, especially in curve sections.

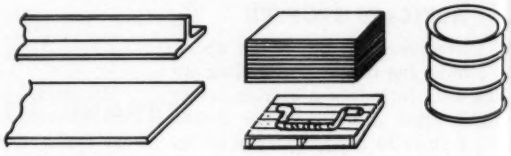
All the factors such as the weight, dimensions, and contacting surfaces of the conveyed materials and the sparing of the rollers which must be considered in selecting gravity rollers must also be taken into account in developing a live-roller line. But in addition, thought must be given to the proper belt, type of drive, takes-up, etc., which govern the selection of a belt conveyor for specific operations. The reader is referred to the sections on "Gravity Roller Conveyors" and "Package Belt Conveyors" for details.

Uniform speeds of from 40 to 60 rpm are usually standard for belt powered rollers, but others can be secured. Variable speed drives of 3:1 are usually standard, but such ratios as 5:15 or 35:100 are available.

ARTICLES HANDLED WELL BY BELT-DRIVEN ROLLERS

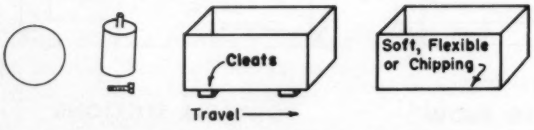


CARTONS, TOTE BOXES, FRAGILE ITEMS, CRATES

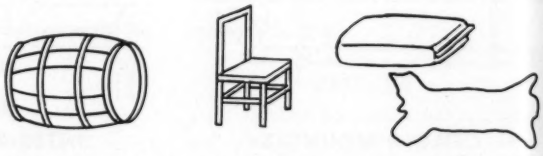


SHAPES & SHEETS, PILES & PALLETS, DRUMS

BUT NOT THESE



ROUND ITEMS, CLEATED BOXES SOFT SURFACES

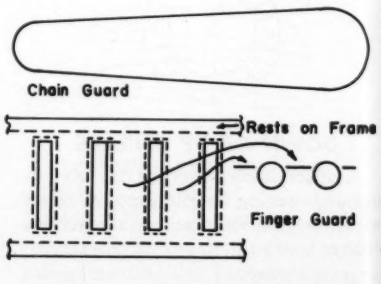


BARRELS, ITEMS WITH LEGS, FLEXIBLE ITEMS

In general, the same items which can be carried successfully on gravity rollers can be conveyed on belt-driven live rollers and, conversely, those that cannot be successfully carried on the former cannot be transported on the latter. The outstanding exception are articles which may affect the belt adversely. Care must be taken, however, not to use this type of conveyor for articles which may shed particles. These will drop on the belt and be carried between the belt and the rollers, causing the belt to track improperly. The belt must have no seams and a smooth surface.

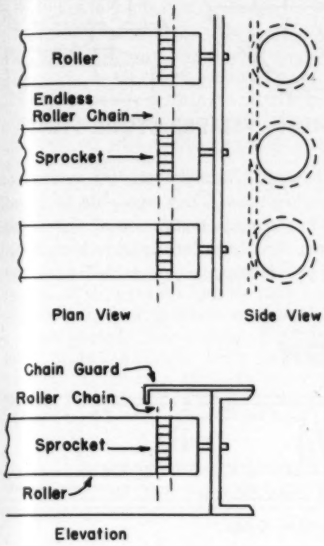
WHERE THEY ARE USED

Belt-driven rollers are found in the same industries as gravity types where their particular features—level lines, power switching, ability to stop packages, etc., are advantages. Manufacturing, processing and bottling plants, warehouses, etc., are among the wide variety of users.



CHAIN-DRIVEN LIVE ROLLER CONVEYORS

TYPES OF CHAIN DRIVES

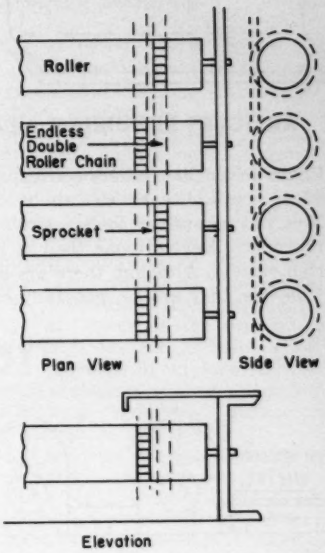


CONTINUOUS CHAIN DRIVES

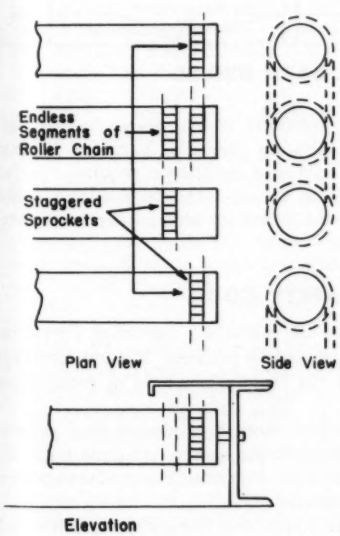
The arrangement shown at the left is the simplest of the chain drives. A single chain runs over the tops of the sprockets which are welded to the ends of the rollers. The closeness of the roller spacing is dependent upon the diameter of the sprocket.

Another arrangement is shown at the left which, though more expensive, permits closer spacing of rollers. An endless double chain runs over the tops of offset (staggered) sprockets.

Both these drives utilize an endless chain to actuate the sprockets, and through them, the rollers.

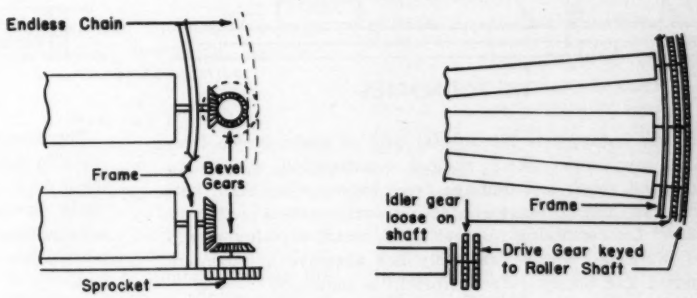


ROLLER TO ROLLER



Short segments of endless chain connect adjacent sprockets. Direct drive from the motor is to any two adjacent sprockets and from there on, the power is transmitted successively through the short segments of chain to the other sprockets. There is no long endless chain involved here.

GEAR-DRIVEN CURVES



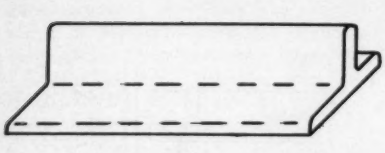
SEVERAL METHODS USED

The method illustrated at the left above utilizes an endless roller chain which runs against horizontally set sprockets whose vertical shafts actuate sets of bevel gears. There is one such set at the end of each driven roller. A variation is to have the endless chain weave its way between the sprockets, but in this case the bevel gears must be set alternately high and low on the shafts so that the driven rollers will all rotate in the same direction.

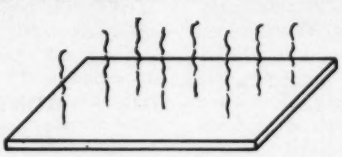
In the gear drive shown at the right, there are two gears on the end of each roller—one an idler, the other keyed to the shaft of the roller. The positions of the idler and the driven gears alternate on the shafts, so that each driver meshes with an idler on the next shaft and that idler in turn transmits the power to the next keyed gear, which then becomes a driver and rotates the shaft to which it is keyed, thus turning the roller. Power applied directly to the keyed gears on adjacent shafts starts the entire system in motion.

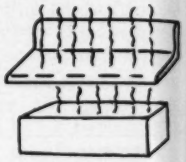
Systems must be enclosed for safety.

UNIQUE COMMODITIES HANDLED WELL BY AND APPLICATION OF CHAIN-DRIVEN LIVE ROLLERS



ARTICLES REQUIRING HEAVY ROLLERS,

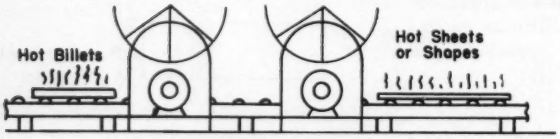




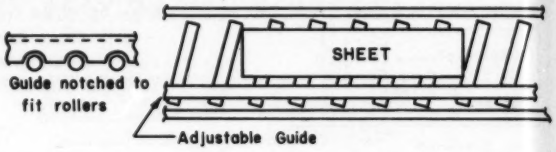
ABRASIVE AND HIGH TEMPERATURE ITEMS

Chain-driven live rollers are capable of conveying any kind of commodity which can be carried on belt-driven rollers, but because of their positive drive they are able to carry much heavier items than is possible with the belt-driven variety. Although there are belts designed to carry hot objects, they are not generally employed in belt-driven live roller conveyors. Instead, chain-driven live roller conveyors are used for this purpose. They are able to handle hot sheets, bars and other shapes right out of the rolling mills and products from heating furnaces, which would damage the ordinary type of belt used to drive live rollers.

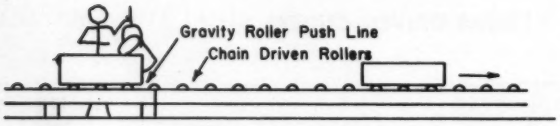
TYPICAL INDUSTRIAL APPLICATION



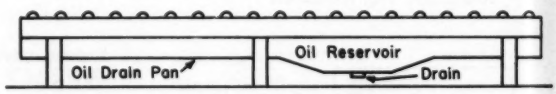
TO AND FROM VARIOUS MILLS



SKEWERED ROLLERS



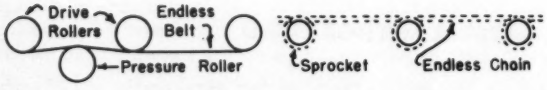
IN FOUNDRIES



OIL-BATH DRIVES

Heavy industry is the special field of chain-driven live-roller conveyors. Their rugged construction, ability to withstand shock and damage from exposure to high temperatures, and abrasive contacting surfaces makes them a "must" for conveying in steel mills, metal working plants and foundries where extremely hot abrasive articles are handled and heavy duty equipment a requisite.

The skewered-roller conveyor shown above has an adjustable guide used to line up sheets or bars for feeding them to a rolling mill. Where conditions require, special chain drives which run in an oil bath are available. This arrangement protects the bearings and assures complete lubrication at all times.



COMPARISON WITH BELT DRIVE

The amount of pressure exerted by the actuating rollers in snubbing the belt against the driving rollers is limited, first to prevent damaging the belt by too much warping and secondly, to permit the rollers to stop turning if packages are stopped on the line. This limits both the load capacity and the speed of belt-driven conveyors. On the other hand, there is practically no limit to the load carrying capacity of chain-driven conveyors. There is no chance of slippage, and speeds up to 500 fpm are reported to have been used successfully.

SAFETY CODE

Every different type of materials handling operation presents its own peculiar safety problem. Manual handling is often referred to as the "hernia" method in recognition of one possible injury.

In any gravity flow line there is a chance that fingers may be caught between packages or the packages may fall off the line and cause foot injuries. Powered conveyors introduce additional hazards.

"Safety Code for Conveyors and Cableways and Related Equipment, Bulletin B20-1-1947" of the American Standards Assn. covers the safe use of this equipment. Information on how to secure a copy may be had from The American Standards Assn., New York.

Regardless of the safeguards provided by the manufacturer in constructing a conveyor, there is but one way to prevent accidents with powered equipment—a continuing safety program to instruct the personnel in the proper use of the equipment.

. . . Air Cargo Trends

(Continued from Page 29)

rally, further expansion is likely to come first in these categories.

Clothing No. 1 Cargo

A study conducted by the Research and Development Facility of the U. S. Navy in April, 1952, showed that, on a weight basis, clothing and dry goods comprised 12.1 per cent of all goods shipped by air. This was the largest single category.

Machinery and parts ranked next, comprising 11.6 per cent of the total. Other important classifications were: Electrical equipment, 8.1 per cent; flowers, 7.1; auto accessories and parts, 6.8; aircraft parts and accessories, 5.7, and printed matter, 5.4.

The rapidly expanding electronics field, where value is high in relation to weight, offers a challenging opportunity for operators of air cargo services.

Lower Costs in Sight

In view of the figures mentioned earlier, showing an actual rise in the cost of air cargo transportation, it may come as a surprise to many to learn that we now stand on the threshold of long-awaited, substantial reduction in costs through development of new cargo planes. Costs of less than five cents per ton-mile now can be foreseen.

It is important that the transportation industry, and all concerned with it, realize this and begin to plan accordingly. Unfortunately, it is not possible at this time to disclose detailed performance data on these new cargo airplanes; some of which have gone into production and some of which are in the advanced stages of design. It can be said, however, that they will bring costs down to the range where large-scale civil air cargo transportation will be practical.

These airplanes are being built for military use but the time is not too distant when they will be available for civilian purposes as well. When this time comes, there will be a virtual revolution in the field of air cargo transportation.

For example, a fleet of only nine of the new type logistic carriers can do the work of 171 C-54s or 58 C-124As at a cost of from one-fourth to one-third of that needed to operate the older models—and in less than half the time.

In terms of familiar yardsticks, such a logistic air carrier can do as much work in a given period of time as six hundred 2½-ton trucks, a good-sized ship, or a hundred railroad boxcars.

Airplanes of these capabilities, which will bring air cargo transportation into the adult stage of its development are coming as the result of military necessity. And it is obvious that only the military has had the resources to bring about such development within a reasonably short time.

Sometimes it is doubtful if the contribution of the military to civil aviation is fully understood and appreciated. Nearly every important airplane today, and virtually all of the electronic devices, were developed originally under the impetus of military necessity; which made research funds available.

It can be pointed out, parenthetically, that the military also obtained some of its most valued transport aircraft directly from civil sources. The C-47, for instance, was ready for World War II because the civil airlines had established it as a satisfactory carrier which could take considerable punishment. Relatively little engineering effort was required to modify the DC-3 design into the C-47.

The turbo-compound engines which give the DC-7 a cruising speed of 360 to 365 mph—fastest of any piston-powered transport in the world—were developed first for military use.

World speed records, altitude records and distance records all have been made with military aircraft, either operational or research. Each of these has been followed by a parallel, though less spectacular, advancement in commercial aviation.

Past and Future

It is possible, then, to chart the trend of civil air cargo transportation by examining some past and future military requirements. Military operations have contributed not only to technical advancements in aviation but have had a profound effect on the general philosophy of air transportation. Until compelled by military necessity to change our thinking, we believed ocean crossings could be made only with seaplanes. World War II and the C-54 erased that misconception for all time.

It was this new view of the potentialities of land-based airplanes, which could span oceans or continents at will, that gave rise to the concept of a cargo airlift. The term airlift itself is of military origin.

Its importance has been demonstrated, first in the Hump Operation which supplied China during World War II, and, perhaps most dramatically of all, in the Berlin Airlift.

Our present problem is to forge the most effective weapon of defense for our nation with the least possible drain on our resources. With the possibility of crises developing simultaneously in many parts of the world, this country cannot afford either huge stockpiles or long pipelines of continuous supply.

These pipelines during World War II absorbed as much as 200 days of supply merely to insure one day's support in the field. Such a theory of abundance cannot be accepted under present conditions because it is economically destructive.

Global Airlift Needed

There must be a shortcut. An adequate airlift to any portion of the globe appears to be the answer. Large, fast, dependable aircraft can cut weeks from a logistic channel and could spell the margin between victory or defeat in a military operation.

One example, that of Air Force engine replacement, gives an idea of the military importance of developing new cargo transports. The engine airlift, incidentally, has been adopted by the Air Force as the first phase of its projected air logistics program. Air shipment of engines reduces the time of the engine overhaul cycle from 270 days, required by surface transportation, to 100 days.

It has been estimated that the overall engine requirements of the Air Force will be reduced by about 25 per cent through this operation. This amounts to a saving of millions of dollars a year.

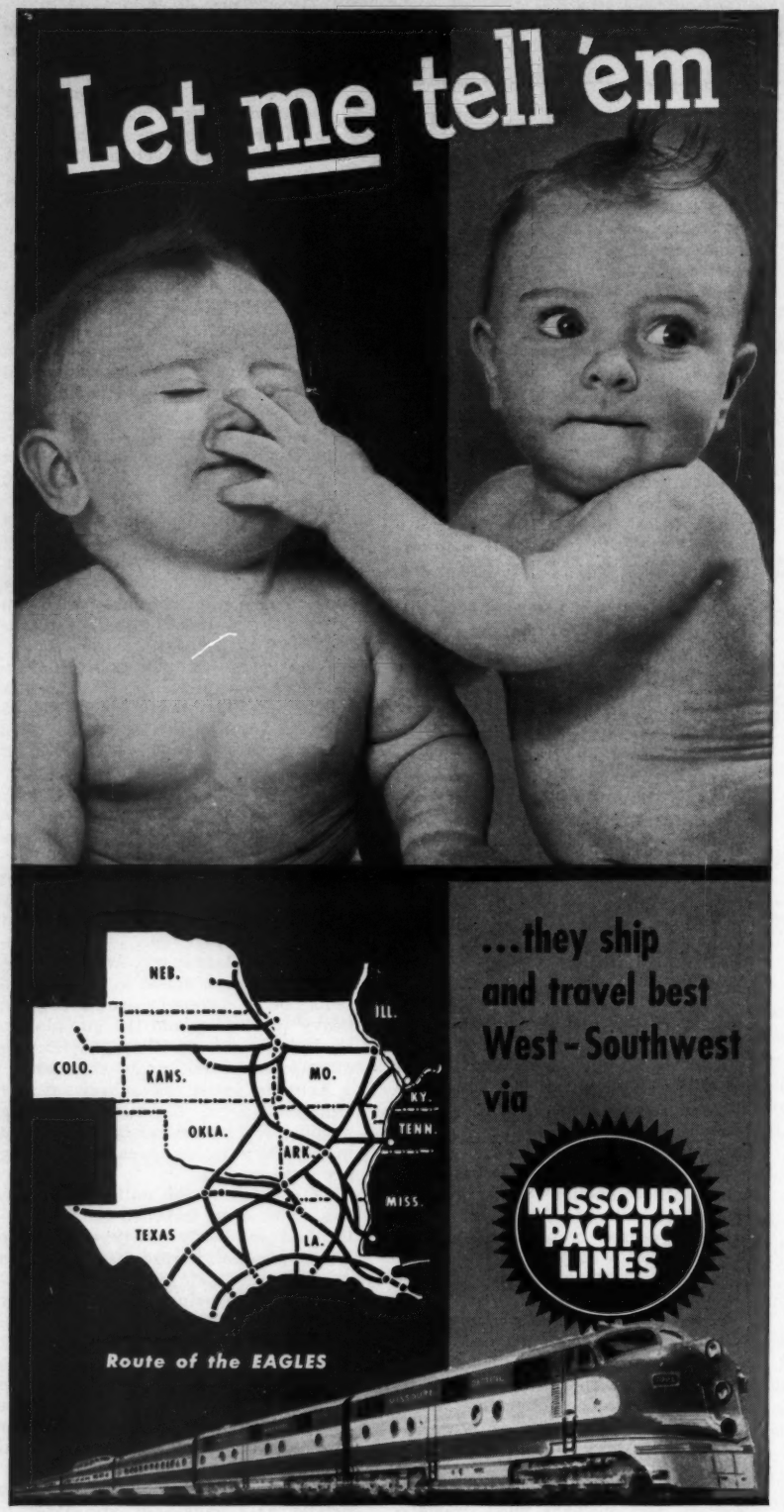
A further example of the importance of an air logistics system is a study conducted by the Air Force which showed that out of 725,000 inventory items, two per cent of them account for 40 per cent of the money value. It is in such areas as this that enormous savings can be effected—through air transport. Added to the savings through speed in transit and reduction of inventory are savings on heavy packaging and the elimination of damage and loss through pilfering often incurred in surface shipments.

Another great advantage of air transport is its flexibility, enabling supplies and manpower to be diverted immediately to the area where they are most needed.

This sketch of the military necessities which have impelled the development of completely new types of cargo planes gives a glimpse of what lies in store for civil air cargo transportation. For the principles of inventory reduction and other advantages arising from increased speed in transit apply equally to commercial air cargo operations. One observer has referred to a military air logistics system as offering "a pilot project for a major new expansion in the international movement of commercial cargoes."

The new airplanes discussed in this article, as I have said, are either in production or in the advanced stages of design. If we take a peek a little farther over the horizon, the day of nuclear-powered air freighters can be seen. Then, the potential of air cargo transportation will be limitless. •

(Resume Reading on Page 30)



MODERN···PROGRESSIVE

MO-PAC

. . . Team

(Continued from Page 27)

tremendous savings often possible from efficient, up-to-date transportation control techniques, it is a shocking fact that in many firms—chiefly those of small or medium size—the traffic manager is a more or less forgotten man, with often little more standing than a high-grade shipping clerk.

In deploring this situation a railroad executive recently put it this way: "There are still too few traffic managers with any real status. They don't get executive pay, and they don't do an executive job in a great many cases because they aren't qualified to do one, and in others because they are not permitted to."

In companies alert to the key importance of efficient traffic management, those in charge of this corporate activity are members of policy-forming committees and report directly to the president. In other less alert companies they are likely to be responsible to the purchasing agent or perhaps the sales manager—neither of whom is generally qualified either to deal with or even understand the complex problems and terminology that surround modern traffic management! Nor should they be expected to. They have complex and important jobs of their own to handle and should not be burdened with the added complexities of traffic management.

It has been well said that because of the complexities of modern transportation methods, the industrial management of traffic has grown from a secondary function to a highly specialized profession. In an economy such as ours, where transportation plays a dominant role, it cannot be safely treated as a corporate stepchild.

A well-run industrial traffic department can be a vital factor in lowering production costs and increasing sales. It can help widen company markets. Its analysis of transportation and distribution costs may open up new sources of raw materials. It can be a material factor in building customer good will.

But to do this, the traffic manager must be a permanent and respected member of the top management team, paid accordingly. As the Associated Traffic Clubs Foundation puts it, "The talents of a capable traffic manager qualify him for membership on the industry executive team that develops and implements corporate policy and strategy." Happily, the trend today is in this direction. •

Editor's Note: This series of copyrighted articles is being excerpted from a forthcoming book by the author. The editors of DISTRIBUTION AGE gratefully acknowledge the privilege of exclusive prepublication magazine rights.

(Resume Reading on Page 28)

...Practitioners

(Continued from Page 31)

be wanted who has the "know-how" to render the best possible assistance and cure. If a child is ready for school, his teachers would be expected to be the best qualified.

If the highest qualification standards are expected in other professions, it certainly is advantageous to expect the same standards in the transportation profession.

True, the new standards set by the ICC will mean more work for those interested; but this is a very highly educational-minded era, and the two years of college work required will be to the advantage of each applicant.

All have heard the far reaching cries of traffic managers that management doesn't recognize the traffic department as being essential. How else can the traffic managers gain recognition than through technical training in the field? How else can transportation work gain recognition as a profession other than through technical training?

The University of Fort Worth, as an example, offers a transportation certificate which requires two years, or 61 semester hours of college work.

First year—Freshman English, 6; speech, 6; general economics, 3; statistics, 3; accounting, 4; salesmanship, 3; business law, 6; business letter writing, 3; principles of transportation, 3.

Second year—Economics (principles of traffic management), 6; economics (problems of traffic management), 6; economics (advance problems of traffic management and study of transportation law and regulations), 6; government regulation of business, 3; air transportation, 3.

I sincerely believe the ICC should continue to admit and recognize lay practitioners, for more of them meet the qualifications of transportation experience and general knowledge than practicing attorneys. Also, I sincerely believe the Commission should require practicing attorneys to pass the Commission's written examination before being admitted to practice. The lay practitioner would certainly be required to pass the bar examination before being allowed to practice law.

I don't think the Commission should, or would, cancel the certificates held by persons who have never practiced before them. Nor do I think those of us holding certificates should be required to get in our two years of college work, if we don't have it. The recent decision, in my opinion, is to govern the future. •

Editor's Note: Mrs. Bunch was awarded a $25 U. S. Savings Bond for her prize winning essay on September 20, at the 32nd Annual Meeting of the Associated Traffic Clubs of America, in Cleveland, Ohio.

(Resume Reading on Page 32)

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. . . Freight Handling Program

(Continued from Page 39)

week is marked in these spaces. The fifth space shows the total number of stinkers made during a four week period.

The right-hand side of the board shows a similar column of spaces except that these show a week-by-week report of stinkers occurring during the current period. By checking one column against the other, handling personnel can tell how they are doing —whether they are improving or getting worse, or just standing still.

The center of the board prominently displays the number of stinkers charged against the terminal in question for the previous day. Therefore, we like to render a day-by-day report of our progress in better freight handling.

Below this center section of the board we have a heading which reads, "Our Program." Under this head we propagandize our new program by stating, "Eliminate words 'Claim Prevention.' Call them 'Improved Freight Handling.' The OS&D's now are called 'Stinkers.' Let's cut down on the 'Stinkers'."

There is a strip of black slate across the bottom of the board which is used in giving short chalk-talks or timely sayings to the handlers. For a stinker-free day we might write, for example, "Detroit pitched a no-hitter yesterday. Nice going!" A bad day and we might write, "Yesterday we stunk!"

The stinker boards are well received by the handlers who, because of the day-to-day and week-to-week progress reports, are trying to better the records set at other terminals. Within each terminal friendly competition is developing between handling crews.

We check on the progress of our better handling program by means of charts hung on the office wall. One general chart covers our entire system. We employ other charts of similar make-up dealing only with those particular terminals which are producing too many stinkers. By maintaining individual charts on the troublesome terminals we thus isolate them. This isolation permits us to give these terminals our special attention—a major reason for our improved handling performance.

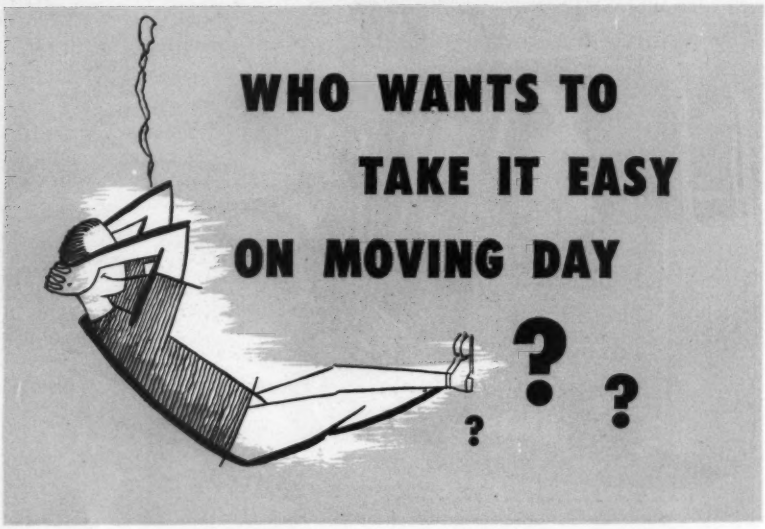
When we began making up the charts we had to provide some yardstick against which to compare our present handling performance. We obtained this norm for each of the troublesome terminals by going back to the time when a bonus system was in effect. The company picked a two-year period and from this span took the OS&D record of the good and bad periods. From these, we averaged the number of chargeable OS&D's per 1,000 shipments. This gave us our yardstick for each terminal.

The norm is represented on each terminal's chart by a line drawn from side to side on the chart and through the center. This line is labeled Fair. Any graph line running above this line, according to the number of stinkers occurring per 1,000 shipments, means that the stinkers are declining. Any graph line below the Fair line means performance is deteriorating.

A series of light lines, spaced at intervals across the face of the chart and running from top to bottom, represents our time periods. The year is broken into 13 periods of four weeks each. Thus the graph lines disclose progress for any given period. By consulting the chart we also are able to tell how many stinkers per 1,000 shipments the terminal is producing.

In keeping interest alive in the handling program and as a means of information, we furnish all dock and terminal managers with a complete picture of handling operations by means of a "Chargeable OS&D" form.

The first column on the left lists locations of our terminals. Then under the various headings: Short, Misloads, Improper Handling, Defective Equip-



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NATION-WIDE FURNITURE MOVERS

ment, we put the chargeable OS&D into its proper classification. This general classification is broken down into a number of sub-heads under which are listed the number of chargeable OS&D's for the terminal concerned.

The Short column is not broken down. Misloads breaks down into the following: Wrong Trailer, Freight w/o Bills, Bills w/o Freight. The Improper Handling column breaks down into: Poor Stowing, Lack Dunnage, Careless Handling, Improper Use of Equipment, Inadequate Facilities, Pilferage. The heading called Billing is not broken down. The Defective Equipment heading breaks down into: Bad Tarp, Holes in Trailer, Bad Doors, Nails in Trailer, Bad Chain Gates, or Bad Tarps.

The last two columns on the right side of the form permits us to list the number of chargeable OS&D's per terminal for the work period. The last column lists the total Chargeable OS&D's per terminal for the year to date. Both of these columns are totaled giving the number of OS&D's of the system for the period as well as for the year to date.

Also, we total the number of chargeable OS&D's according to the type of infraction. In order to learn what type of infraction is causing the most OS&D's we only have to divide one into the other. This gives us percentages.

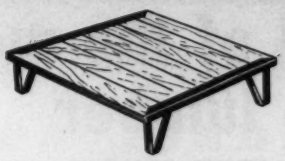
The second half of the form deals with the number of shipments per terminal, the chargeable ratio of OS&D's per 1,000 shipments per terminal, the number of OS&D's issued, the outbound OS&D's charged and the percentage of outbound OS&D's which are charged to each terminal.

A special form letter is used to further the importance of the program among isolated or troublesome terminals. For purposes of advertising our handling campaign and to help keep the personnel conscious of our aims, we head this form "The Objective—Greatest Number of Shipments Delivered Without Exceptions."

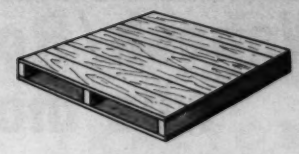
We start the subject matter by writing, "Here's something that should be corrected at your terminal." Under paragraph one, which is headed What's Wrong, we write what is unsatisfactory about the terminal's operation. Under paragraph two, headed "We Suggest . . ." we state the course which we think terminal managers and dock employees should follow. Under paragraph three, headed "What corrective action have you taken?" we expect the terminal manager to tell us what he has done.

Many company benefits are realized as a result of our positive and personalized handling program. We operate more than 900 trucks with only five personnel in our Claims Dept., whereas some operators employ 20 or more people in similar operations. •

(Resume Reading on Page 40)



Skids?



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This RAYMOND Pallet Truck is now available with a hinged superstructure for handling skid loads.

The superstructure raises out of the way when your load is on pallets . . . lowers into position when you're handling skids. It cuts hand truck costs in half for dual skid and pallet handling . . . ideal when converting from skid to pallet operation.

The RAYMOND Hydraulic Truck is lightweight . . . thanks to its aluminum alloy construction . . . yet plenty rugged to provide years of use. It's highly maneuverable, easy to pull, has foot pedals for lifting and lowering loads. Capacity: 2,000 lbs.

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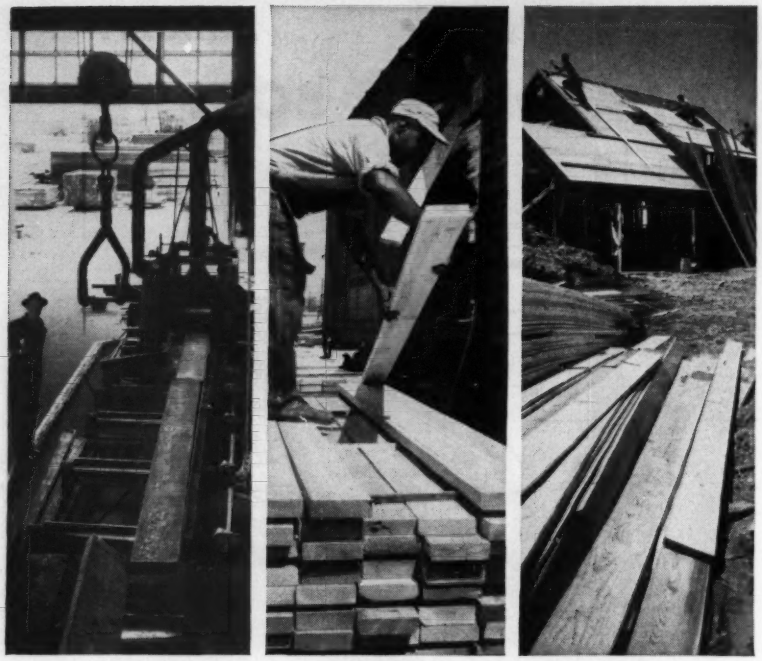
COMPANY _____

STREET _____

CITY _____ STATE _____

Circle No. 13 on Card, Facing Page 53, for more information

Wabash/Road of the men who move lumber



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or, how to get your product to market on time

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Wabash "HOT SHOT" schedules give men who move lumber a dependable way to meet their tough delivery problems. Prompt tracer reports and the flexibility of car diversion and re-consignment while en route are other Wabash services lumber shippers know and use.

Just as it is for lumber, Wabash "HOT SHOT" freight is a time-saving route for *all* commodities. Whatever the products you want to get to market on time, ask to hear the Wabash story. Representatives in 45 cities can give you all the facts.

SHIPPERS!

Look at the advantages of Wabash "HOT SHOT" Freight

1. "Bridges" the Heart of America, a member of 13 Eastern and Western rate associations and committees.

2. Connections with 64 major railroads. Coordinated schedules at 118 interchange points.

3. All Diesel-powered trains.

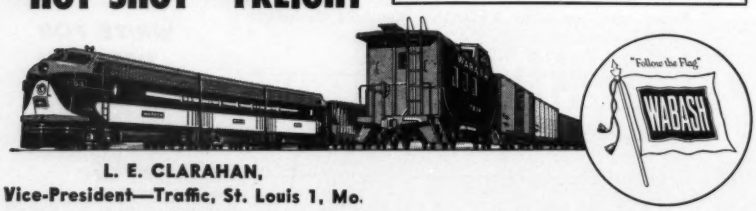
4. Superior car service to shippers.

5. Fast "HOT SHOT" schedules to and through the major Gateway terminals or by-passing them altogether—as you wish.

6. Modern yards designed for faster assembly of trains and more orderly traffic flow.

Wabash

"HOT SHOT" FREIGHT



L. E. CLARAHAN,
Vice-President—Traffic, St. Louis 1, Mo.

Paperwork . . .

(Continued from Page 35)

these files in standard drawer cabinets. The most time-consuming problem was the understandable factor of human error all along the route a contract file normally follows. Actually, this amounted to as much as 10 per cent. It also was very difficult to keep the work current, and while contracts moved rapidly in and out of the department huge stacks of unfiled material piled up. Realizing that we were not making the best use of available space as the file grew larger and larger, we began to study methods which might remedy the situation.

Terminal Digit Filing

The system purchased involves the use of open shelf, terminal digit filing methods. Contract folders are filed in upright position on shelves, seven shelves high, behind a series of dividers arranged according to the terminal digits. Folders are not filed in strict numerical order, but according to the last figures in each contract number. Thus all contracts whose numbers end in 123 or 999, or any other group of three digits, are filed together—arranged numerically within that group.

Actually, for each set of terminal digits, there are not one but five index series. The five represent the prefix letters identifying the seven area dispatch offices. "A" and "B" are filed together, and so are "D" and "E," simply because these are relatively smaller groups. Breaking them down in this manner helps to equalize the size of each index.

Thus the first numbers in the file may be, for example, A4001, A7001, A12001, etc., followed by the 001 series for each letter in order, and then proceeding to the 002 series broken down into the alphabetical groups.

In capacity alone, we have gained tremendously. The open shelf files have a capacity equal to 126 four-drawer cabinets, and occupy 28 sq ft less than the space formerly occupied by 54 such filing cabinets. We now have a capacity for more than 95,000 contracts, enough to accommodate 18 to 20 months' volume at the present work rate. Actually, this is considerably longer than the period of normal activity, so that this span can be decreased as the volume rises without lessening the value of the file.

Charge-Out System

But while space saving is important, it is not nearly so valuable as other benefits derived from this change in system. Extremely important among these is the reduction in human error from a former 10 per cent ratio to less than one per cent. Part of this is due to a charge-out system, instituted with the open shelf filing.

We now use a blue-tabbed charge-

out card, which is inserted when a contract is removed from the file, and which has a cellophane pocket to hold one or more 3x5-in. index cards containing exact information as to where the folder has been routed. Each time a contract file is sent from one department to another, the first department takes out a card and sends it back to the contract department.

This card shows the contract number, the sending department, the department to which it has been routed, and the date and hour. As several of these cards accumulate in the pocket, it is a simple matter to determine exactly where a contract is at any particular time.

Progressive Aging

Throughout the contract department, the terminal digit set-up has been particularly valuable in smoothing out the physical work of filing and finding. One of the important advantages is that whole sections of the files do not age at one time. Aging, and removal to storage files, occurs within each index grouping, so that there is no cumbersome shifting of the entire file periodically to make room for new folders.

Another important aspect is the physical handling of the files. Most of this material remains very active for about two to three weeks, and then drops off to a longer period of only occasional reference. With the previous numerical files, all of this heavy early activity was in one area, and the 10 girls in the department were getting in each others' way constantly. Now, since the terminal digits rather than numerical sequence determine the position of any given contract folder, this activity has been spread evenly throughout the entire filing section so that congestion has been relieved.

One girl now is responsible for each section of the file, and also responsible for the wants of one particular department in the offices. This has made the flow of work, both within the contract department and to and from other departments, much smoother than we had ever believed possible.

Employee Morale

There also has been a great improvement in morale among the girls in the department. Previously there was a high rate of turnover, since the work was inclined to be tiresome and unpleasant. No personnel has been lost for that reason since the new system started. All of them are pleased with the improved working conditions, and take a greater pride in their work because they have been given individual responsibility in certain phases of filing.

The backlog, which formerly was acute, has been almost completely eliminated. Today, a few folders at any given time represent the entire backlog, and these are frequently problem files which need special handling.●

(Resume Reading on Page 36)

NEW *Four-Wheel-Drive*
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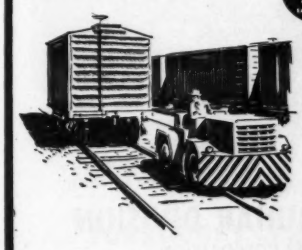

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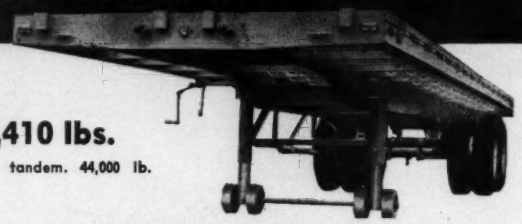

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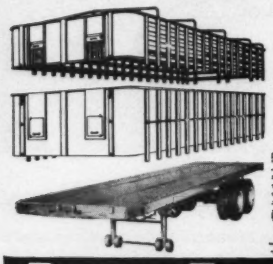

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. . . AST&T

(Continued from Page 32)

normally has been extended to accounts and statistics, issuance of securities and nature of financial structure, and the filing of tariffs."

To show the extent of unregulated carriage, Koontz said, "Of a volume of total intercity traffic of 206.8 billion ton-miles in 1953, it is estimated that less than 45 per cent is carried by the regulated common carriers and the partially regulated contract carriers."

After summing up the total growth of freight in intercity traffic, Koontz said, "There is evidence that unregulated carriage is no more important a factor in motor transport than it was before World War II."

In reviewing problems relating to existing regulated and unregulated forms of transportation, Professor Koontz presented the following alternatives: 1. Continuance of present unequal regulation; 2. Thorough regulation; 3. Free responsible competition; 4. Limited regulation.

His concluding observation was that perhaps the interests of all concerned may be reflected best "in a policy of three freedoms: Freedom to compete, freedom from unfair and unnecessary subsidy of competitors, and freedom to be efficient."

Effect of Restraints

The second panel covered, "Competition Within Separate Fields of Transportation." Kent Healy, professor of Transportation, Yale University, presented the paper. J. W. Hersey, president, Commercial Transport, Corp., Houston, and William White, president, Delaware & Hudson Co., New York, were the commentators.

Most of Professor Healy's comments concerned competition among railroads which, because of government, regulatory restrictions, resolves itself, he said, more to a matter of restraints than free competition.

He referred to the regulated monopoly to which the railroads were subject and the emphasis on, "overall profitability with protection against many aspects of competition in return for formally recognizing some of the public service obligations."

One of the results, Healy pointed out, was "lack of enthusiasm for cost finding" on the part of the railroads. Thus, until the 1930s railroad pricing failed to reflect such basic considerations as the load factor.

"A loosening of association and governmental inhibitions on the railroad pricing should lead to more price competition among railroads themselves," he said, "leading to a generally more desirable possibility of their rates being oriented to their own

adequately considered costs."

Healy then pointed out that "any analysis of competition must consider the effects of the number of competitors." He broke those in the railroad field into several size groups, concluding that size could not be used as criterion for such factors as financial soundness, reputation for service, or employe morale. In fact, he concluded, the small roads showed relative superiority in most of the factors.

In a final appraisal, Healy stated that possibly the most important aspect of intra-industry competition lies between competitive enterprise and socialism.

Transport Policy Outmoded

The topic of the last panel was, "Competition in The Public Interest." Charles L. Dearing, senior staff member, Brookings Institution, Washington, D. C., presented the paper. Commentators were R. L. Bowditch, chairman, C. H. Sprague Co., Boston; R. S. Damon, president, Trans-World Airlines, New York; and A. P. Heiner, vice-president, Kaiser Steel Corp., Oakland, Calif.

Dearing introduced his topic by pointing out that the nation had undergone a "transportation revolution" within the past 25 years but that the public transportation policy failed to keep abreast. "The major difficulties," he said, "stem from the fact that the national government restricts with one hand and promotes with the other.

"Historically, the maintenance of common-carrier service has been recognized as the hard core of the transportation system," according to Dearing.

"These are compelling reasons," he said, "for continued government participation and regulatory intervention in transportation affairs. Yet, within these limitations, there remains a wide area in which effective inter-agency competition can be substituted for managerial regulation as a means of arriving at the most economic division of available traffic."

Minimum Rates

Dearing then reviewed the ICC's activities in rate problems in which "minimum rate control became a major concern of the Commission," pointing out that "the Commission has been faced with the economic axiom that public subsidies and competitive private enterprise do not work harmoniously."

In conclusion he cited a number of ICC decisions during the past 15 years that "indicates clearly that the Commission has not developed either quantitative formulae or consistent guiding principles to govern its decisions in rate regulation. This situation, he said, demands revisions in the basic national transport policy.•

(Resume Reading on Page 33)

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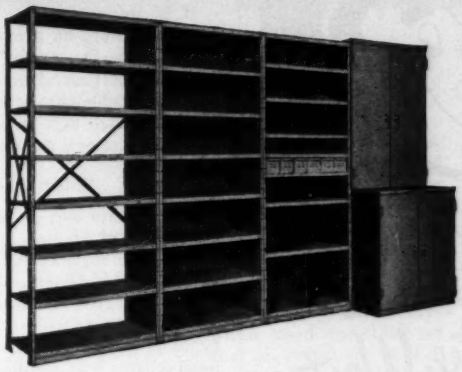

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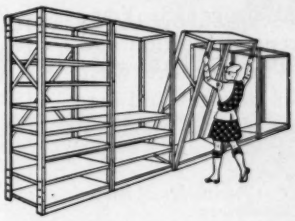

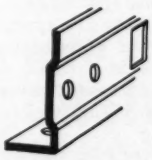

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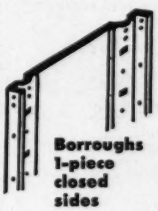

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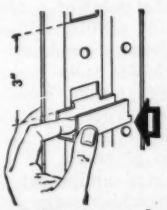

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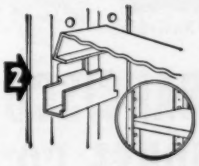

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. . . Freight Rate Making

(Continued from Page 33)

cost finding must take these variable factors into account, and the formula as well as factors which make up the formula must be revised as necessary. Poor cost data are worse than no cost data, because the former give an illusion of reality which does not in fact exist.

It is important in cost determination that there be a meeting of minds in the concepts of different types of cost. At the risk of being unduly cautious and elementary it is suggested that standard and generally accepted cost terminology be used.

Fixed Costs

Fixed costs are costs which are independent of volume of traffic or output. These costs include interest upon fixed interest-bearing securities, carrying charges on sunk capital improvement, depreciation, certain types of property taxes, certain overhead costs, and similar non-variable expense items. The revenues from total traffic should be adequate to finance these costs.

Variable costs are those which vary with the volume of traffic or output, although not necessarily at a uniform rate. With small volume of traffic the variable costs may be high per unit. These costs may, and often do decrease per unit as economies are realized from efficiencies derived from the increased utilization of existing plant facilities.

The costs are spread over a larger number of units of traffic. These reductions in variable costs may arise out of increased utilization of existing plant facilities — short run decreasing costs—or from reductions in unit costs resulting in the expansion of plant facilities to handle larger volumes of traffic—long run decreasing cost.

As the volume of traffic increases past the point of optimum utilization or point of diminishing return, unit cost shows a tendency to increase.

Variable costs include such items as wages, fuel, supplies, traffic expenses, direct supervisory expenses, maintenance costs, taxes based upon volume of traffic or units of service, rentals of equipment, and similar expenses which vary with volume of traffic or units of service performed.

Total costs are the sum of fixed and variable costs.

Average costs are determined by dividing total costs—fixed and variable — by the total units of traffic transported. The average costs decrease per unit as volume of traffic increases as a result of spreading the costs over a larger number of units of traffic until the point of diminishing returns become operative when the unit costs rise.

Marginal costs are the added increments in unit costs for each extra unit of traffic. They represent the difference in unit costs between the cost per unit at one level of traffic and the unit cost at another level. Marginal revenue is the difference between the revenue per unit of traffic at these two levels.

Out-of-pocket cost include all extra or added items of cost incurred by transporting certain traffic which would not have been incurred had the traffic not been transported. These costs include the extra labor, materials, supplies, equipment, running repairs or maintenance, traffic expenses, and accounting costs, directly attributable to the handling of specific movements of traffic. Out-of-pocket costs do not include any fixed costs excepting insofar as the extra costs incurred in the particular items include them.

Marginal costs can be differentiated from out-of-pocket costs in that marginal costs include fixed as well as variable costs. It should be noted also that out-of-pocket costs are those which are applicable in the short run from plant of a given scale.

Average costs are necesary as a yardstick by which to measure the proposed rate to ascertain the extent to which it is above or below rates which bear their full share of total costs — fixed and variable expenses. Out-of-pocket cost data are essential to insure that the carrier receives back in revenues from particular movements of traffic at least the amounts expended in moving the traffic.

In computing costs of transportation, particularly in determining out-of-pocket costs, it is recommended that the units of traffic into which unit costs are computed be relatively larger units than ton-miles so that the comparisons may not be in such small figures as to appear to be inconsequential. The writer recommends car-mile, track-mile, barge-mile or even train-mile as appropriate units.

It is also suggested that in studying costs that consideration be given to indirect costs as well as those directly chargeable to specific movements of traffic.

In any cost calculation certain general or overhead expenses, such as freight traffic expenses—including solicitation and tariff expenses, accounting expenses, miscellaneous transportation expenses, and maintenance—must be estimated. To some extent these costs vary with differences in volume of traffic, and to some

extent they vary with time or other conditions not connected with volume of traffic. The distribution of these costs is a problem to be solved by the application of informed judgement by experienced transportation men, and not one to be approached by theoretical or mathematical methods.

Out-of-pocket costs, if properly computed, cover all direct expenses and an estimated share of indirect expenses which cannot be directly calculated, but are known to be expended in the performance of the service. In order to provide a margin of safety to compensate for variations in cost, contingencies, claims for loss, damage or delay, and other contingencies, an increment of a percentage of the ascertained out-of-pocket costs should be added.

After the probable volume of traffic is ascertained and the units of service necessary to transport it have been estimated, the following items of cost should be considered in calculating the cost at which the traffic can be handled:

1. Operating personnel wages, including so-called fringe benefits.
2. Motive power costs, including rentals, charges, depreciation, and maintenance.
3. Vehicle costs, including same factors.
4. Dispatching.
5. Station and platform expenses.
6. Fuel, oil and supplies.
7. Freight traffic expenses.
8. Accounting expenses.
9. Miscellaneous traffic costs.

To these costs are added a percentage for contingencies or variations.

The total share of out-of-pocket costs attributable to units of traffic can then be ascertained by dividing the volume of traffic by the total of the out-of-pocket costs plus contingent expenses, to derive an out-of-pocket cost per unit of traffic.

These units may be per train-mile, per car-mile, per ton-mile, per truck-mile, per vessel-mile, per barge mile, per barrel-mile for petroleum traffic transported by pipe line. The out-of-pocket costs also may be calculated per carload, per truckload, per vessel or barge load, per ton or per 100 lb.

A rate now can be established with the knowledge that it covers out-of-pocket costs and a margin for contingencies. It may be compared with the total average unit cost to ascertain what contribution, if any, it makes to general or overhead expenses and return on investment in property.

This comparison shows also how much burden the rate based upon out-of-pocket cost plus the factor for contingencies places upon other traffic to yield a fair return upon the value of the transportation property or to produce the revenues necessary to provide the profit required by the carrier to insure the continuance of its operation. •

(Resume Reading on Page 34)

Circle No. 18 on Card, Facing Page 53, for more information

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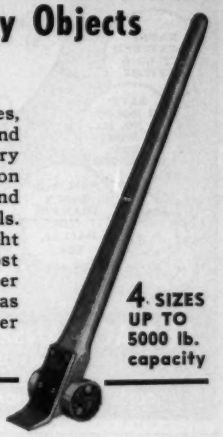
Cuts moving time up to 65% on large cases, crates, machinery and bulky items. The scientific size and position of the wheels permits the lift blade to pry under objects flat to the floor. The wheel position also gains a high leverage ratio between power and load. Eliminates the danger of tip-ups and high falls. Thousands of Micro Dollies now in use by freight houses, warehouses, terminals and factories. Most users find that a pair of dollies provide even greater advantage and time saving when used together as shown in picture above. Choice of metal or rubber wheels.



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This is another typical materials handling assignment that is a "natural" for Wisconsin Air-Cooled Engines because of their inherent Lugging Power, heavy-duty engineered design and construction and foolproof AIR-COOLING.

You can't do better than to specify "Wisconsin Power" for your equipment.

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MILWAUKEE 46, WISCONSIN

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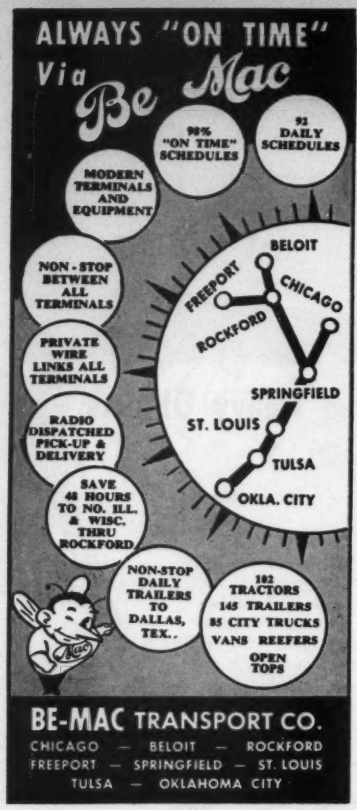

Torque Converters . . .

(Continued from Page 43)

for the 11-in. and Point B being for the 12-in. converter).

Through the 11-in. converter, the starting torque reaches 164 lb-ft. when the motor is running at 1,720 rpm and developing 58 lb-ft. of torque. This means, then, that the motor is running with very little overload but the converter has made available considerably higher torque for starting and accelerating a load.

The 12-in. converter, when stalled, pulls the motor speed down to 1,620 rpm where its torque is 80 lb-ft. This greatly reduces the time at which this motor could run with the converter output stalled, and without the overload switches acting to shut the motor off.

When studying the performance curves on torque converters, it will soon appear obvious that the converters will assist in paralleling two or more prime movers on one driven load, as shown in Fig. 3. When one prime mover tends to speed up, it naturally tries to assume more than its share of the load. Due to the characteristics of the fluid drive, however, it cannot pull the other prime mover as would be the case with direct mechanical drives. Eventually, the units will assume their proportion of the load and work together as a team.

The use of the torque converter on these systems greatly reduces both initial cost and maintenance problems. It also can offer another advantage. When one of several units became inoperative, the conveyor still could be operated at a reduced speed, since each motor-converter power unit would be capable of assuming an extra torque load at a reduced speed.

Another application which can be considered concerns torque converters for industrial trucks powered by internal combustion engines. Many such trucks are called on to work in warehouses where the aisles are rather narrow and where a considerable amount of close moving is required.

The torque converter eliminates the need for a clutch to inch the vehicles around in small spaces. Since the converter also multiplies torque, in most cases it will eliminate the requirement for a multiple-gear transmission. The converter can work at partial throttle conditions where light loads are encountered or it can operate at full throttle where high torque is required for negotiating ramps or soft surfaces. Since the power is applied gradually when the engine changes from idle to full speeds, the tendency to slip the wheels is greatly reduced.

According to Mr. M. W. Hagen of the Buda Co., Div. of the Allis-Chalmers Mfg. Co., in his paper entitled "Experts Give Fork Trucks a Going Over" in the December, 1954, issue of the *SAE Journal*: "Fluid drives will increase tire life by approximately three to one. They will do an even better job for clutch life. Control is superior when inching a load into position, and the elimination of starting jolts prevents damage to the load."

There undoubtedly are many other such applications in various material handling problems. In general you will find that torque converters can be used to great advantage wherever:

1. High starting torque and low running torque are required to do the job.

2. Shock loads present a problem and maintenance, as a result of this type of loading, is costly.

3. It is desired to reduce peak starting current and improve power factor.

4. Variations in loading must be quickly and accurately compensated for without affecting the efficiency of the prime mover.•

(Resume Reading on Page 44)

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• Save Docks
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Within the LAW

By Leo T. Parker Legal Consultant, Distribution Age

WAREHOUSING

Who is liable for negligent destruction of store goods by fire of unknown origin?

Irrespective of various provisions of the Warehouse Receipt Act, which has to do with contracts of bailment, a warehouse never is liable for negligent destruction of stored goods by fire of unknown origin. The warehouseman is not liable, unless the evidence proves that the fire originated as a result of his negligence.

For instance, in C—— v. S—— Moving & Storage Co., 267 S.W. (2d) 363, it was shown that one C—— stored his household and personal property with the S—— Moving & Storage Co. The warehouse and the property stored in it were destroyed by fire.

C—— sued the warehouse for the value of the destroyed goods. During the trial C—— argued that the warehouse was liable because his stored goods were destroyed by fire in the warehouse, and that the fire must have been caused by negligence of the warehouse employes. The lower court held the warehouse liable.

The warehouse appealed to the higher court which reversed the lower court's verdict, holding the warehouse not liable and said:

"A fire of unknown origin does not give rise to the doctrine of res ipsa loquitur. A finding that the defendant (warehouse) was negligent, was erroneous."

For comparison see the late case of F—— v. W—— Bros. Moving & Storage Co., Inc., 267 S.W. (2d) 359. The testimony in this case showed these facts: On March 5 one F—— entered into a contract of bailment with the W—— Bros. Moving & Storage Co., Inc., where he stored certain articles of household goods. The warehouse was not of fireproof construction, the warehouse employed no night watchman, nor was the warehouse equipped with any automatic sprinkler system.

The warehouse caught fire one night and destroyed the goods stored therein. F—— sued the warehouse for the value of the destroyed goods, alleging that negligence of the warehouse employes resulted in the fire. However, as F—— failed to prove that the fire resulted from the warehouse's negligence, the higher court refused to hold the warehouse liable, saying:

"No night watchman or sprinkler system was required either by the Uniform Warehouse Receipts Acts, or any other state or city legislative enactment. Neither the plaintiff nor the defendant has any evidence as to the origin of the fire, nor does the plaintiff have evidence of any specific acts of negligence of the defendant (warehouse). When a fire originates in a warehouse, that alone is not evidence that it was caused by any negligence on the warehouseman's part."

On the other hand, if the bailor sued a warehouseman on contract, alleging the delivery of the goods to the warehouseman and proves that he made lawful demand for the return of the goods, and the warehouseman refused or failed to return the goods, the warehouseman must then, in order to legally avoid liability, show that the goods were lost or destroyed without his fault or negligence.

For further comparison see W—— v. A—— Transfer & Storage Co., 141 S.W. (2d) 205. There the court applied a different doctrine to fire originating in the dual wheels of a semi-trailer transporting household goods en route from Chicago to St. Louis. After the fire was discovered by the drivers, but before it could be extinguished by them, it spread to the trailer resulting in the latter's destruction.

Without any proof that the fire resulted from negligence of the driver, the higher court held the transfer and storage company liable, and said:

"This court judicially knows the tires would not have burst into flame unless they had been subjected to intense heat; and as there is no reason to believe the heat was engendered by any agency save friction, the jury was not bound to believe the drivers discovered the condition as soon as they should have discovered it in the exercise of due care."

Readers who desire to read late and leading higher court decision involving destruction of stored goods by fire, see cases, as follows: W—— Bros. Moving & Storage Co., 266 S.W. (2d) 19; K—— Co. v. R—— & Sons, 250 S.W. (2d) 692; K—— v. P—— Corp. 324 Mo. 992; 78 A.L.R. 722 and H—— v W——, 183 S.W. (2d) 74; D—— Warehouse Co. v. W——, 13 A.L.R. (2d) 669.

Can employee get compensation only for injuries received within scope of employment?

Generally speaking, an employee can recover compensation under the State Workmen's Compensation Act only for injuries received within the scope of his employment. However, a late higher court has modified this old law.

For instance, in L—— v. C—— Wharf & Warehouse Co., 211 Fed. (2d) 454, it was shown that an employee, named L——, of the C—— Wharf & Warehouse Co., while at his regular work sustained an injury to his left leg on Sept. 6. Two months later, on Nov. 7, he fell from a stepladder at his home, sustaining additional injuries. The testimony showed that L—— was actually at work on his job and while easing himself down from the top of a hatch he landed on his left foot and suffered a straining injury in the region of the left hip. He was disabled for 12 intermittent days during the period following the accident on Sept. 6, and did not report for work on any of the 12 days. On the morning of Nov. 7, L—— was standing on the second or third step of a stepladder in his garage and he fell to the floor, suffering further injury.

Both the commissioner and the

(*Please Turn Page*)

Within the Law . . .

(Continued from Preceding Page)

lower court held the first injury to L—— to be compensable. The commissioner held the second injury compensable because it was "directly attributable" to the first injury. The lower court held the second injury not compensable holding that L—— was negligent in being on the ladder in the circumstances at his own home.

This question was presented the higher court: Is L—— entitled to additional compensation under the State Workmen's Compensation Act for the injury he sustained while doing work in his own home? It is interesting to observe, that the higher court held in the affirmative, saying:

"We hold that the part of the law worded, 'or as naturally or unavoidably results from such accidental injury' covers injuries through accidents which happen subsequently to a primary injury. In a sense to be compensable, the second injury must be as a part of the original injury."

Can state court issue valid injunction against picketing in NLRB cases?

According to a late higher court decision a state court cannot issue a valid injunction against picketing by union members involving disagreements within the jurisdiction of the NLRB.

For example, in D—— v. International Brotherhood of Teamsters, Chauffeurs, Warehousemen, 269 Pac. (2d) 199, a warehouse owner sued for an injunction to picketing his place of business for the purpose of compelling him to enter into a union shop contract. The state court issued an injunction against picketing of the warehouse to induce prospective customers to refuse to permit the warehouseman to pack household furniture for shipment out of the state, or doing of any other act to injure the warehouseman's business. The higher court reversed the injunction decision, saying:

"The picketing carried on in the instant action was admittedly peaceful. A state court is without power to grant injunctive relief against alleged unfair labor practices, where exclusive power is committed to NLRB by federal statute."

Is warehouseman liable for injuries sustained by anyone who "volunteers" his services?

Generally speaking, a warehouseman is not liable in damages for injuries sustained by a person who "volunteers" his services. However, according to a late higher court decision where such assistance is necessary, an authority by the warehouseman to perform the needed services may be implied by a court.

For illustration, in F—— v. H——, 108 N.E. (2d) 680, it was shown a distributor sent his motor truck driver, without an assistant, to deliver a refrigerator to a customer. The driver had no helper, and asked the customer to help take the refrigerator off the truck. The driver stood on the ground while the customer got up on the truck and at the driver's request tilted the refrigerator, which fell on the customer and severely hurt him.

In subsequent litigation the higher court held that although the truck driver was not authorized to employ assistance, yet the authority may be implied from attending circumstances such as where assistance to unload the refrigerator was necessary and there were not enough employees on the truck to unload the refrigerator. The court held that the customer could recover damages for the injury.

TRANSPORTATION

If the contract specifies fob seller's city who is liable for loss or damage?

Recently the writer attended a convention of truck operators and this legal question arose: "If a sale contract specifies that merchandise will be shipped fob the city in which the seller is located, who is liable for loss of or damage to the goods before or after shipment is made?"

The higher courts hold very consistently that if shipped merchandise is destroyed, or otherwise damaged, before delivery by the seller to the purchaser, the one who must bear the loss is the one who has legal title to the merchandise at the time it is destroyed. According to a late higher court decision, the risk of destruction of merchandise follows the title, and if the title has not passed the loss falls on the seller, but if it has passed, the loss falls on the buyer.

Another important point of established law is as follows: Where the contract of sale does not provide as to passage of title, the primary evidence in determining whether title has passed is the "intention" of the parties. In other words, if it was the intent of the parties that the title passed at a certain time, or on the happening of a certain event, that intent governs.

For example, in W—— v. M—— Co., 225 Pac. (2d) 78, the testimony showed facts as follows: A purchaser sold a company certain merchandise. At this time the seller agreed to clean and pack the merchandise before shipment. The sale contract was confirmed by the purchaser in a written confirmation. Finally the seller notified the purchaser that the merchandise had been duly cleaned, inspected

(*Please Turn to Page* 109)

First Hydraulic Transmission Locomotive

Inspecting the first hydraulic transmission locomotive built in the United States are: Maj. Gen. Paul F. Yount, Chief of Army Transportation, and William T. Farley, president of the AAR. The locomotive, forerunner of the new light train locomotives being built by the Baldwin-Lima-Hamilton Corp., was officially presented to the Army on July 14, in Washington, D. C., at ceremonies marking the 13th anniversary of the Army Transportation Corps and the 125th birthday of the American railroad industry. The locomotive was named the "General Nathanael Greene I" in honor of the American Revolutionary War "father" of American organized military transportation

Warehouse SPOTLIGHT

Men in the Spotlight

Garth A. Shoemaker, Elmira, N. Y. —re-elected president, New York State Assn. of Refrigerated Warehouses.

Alton Chelf—named manager, San Bernardino (Calif.) Branch, Tri-City Van & Storage Corp.

James A. Saldin, Tacoma, Wash.—elected president, Washington State Warehousemen's Assn.

Gerald Reagan—recently purchased stock and real estate of the George J. Cook Co., Buffalo, N. Y.

Paul Clarke — appointed assistant president, North American Van Lines.

Charles M. Thach, Charlottesville, Va.—elected president, Virginia Movers & Warehousemen's Assn.

George Lentz, Winston-Salem, N. C. —elected president, North Carolina Movers and Warehousemen's Assn.

James C. Irwin, vice-president of United States Cold Storage Corp., Kansas City, Mo., spoke on "Refrigerated Warehouse Construction" at the 9th Congress of the International Institute of Refrigeration, in Paris, last month.

Obituaries

E. C. N. Brown, manager of the New York office of The Packer, died recently at his home in South Orange, N. J.

Frank J. McKee, founder and former president of National Van Lines, Inc., died early this summer.

Joseph W. Glenn, president of O. J. Glenn & Son, Inc., Buffalo, N. Y., died in July.

John G. Hollmeyer, vice-president and general manager, Seaboard Terminal and Refrigeration Co., Jersey City, N. J., died recently at his summer home in Shushan, N. Y.

—DA—

NARW chapter meetings scheduled this month include: North Atlantic, Oct. 5-7, Shawnee on Delaware, Pa.; Southeastern, Oct. 12-13, Nashville, Tenn.; Southwestern, Oct. 14-15, Dallas, Tex.

—DA—

NAVL Sales Agents Meet

Approximately 485 agents and guests of North American Van Lines attended the firm's 1955 Sales Convention at French Lick, Ind., recently. Clarence E. Williams, first vice president, presided. During the course of the meeting it was announced that North American sales were up 15 per cent for the first six months of 1955.

Annual Assembly of Movers Calls for State Movers Act

At its Annual Assembly in Washington in August the Movers Conference of America adopted a resolution urging "the enactment into law in the several states of a Movers Act." The resolution said:

"Be it resolved that this assembly of movers . . . sponsor and aid movers in each of the several states in causing to be enacted into law in the said several states a uniform Movers Act to provide for a recognition of the distinguishing differences between the moving industry and motor freight industry, and, in addition, to provide for uniform, pertinent and simple requirements and regulations which shall apply to mover's vehicles traveling into, from and through the said several states."

—DA—

Warehouses which recently have joined the D. H. Overmyer Warehouse Sales Co. include: Seneca Warehouse & Industrial Center, Buffalo, N. Y.; Market Terminal Warehouse Co., Dunkirk, N. Y.; Security Fireproof Storage, Muskegon, Mich.; Columbia Storage Warehouse, South Bend, Ind.; Bingham Transfer & Storage Co., Pensacola, Fla.; Goose Island Warehouse, Inc., Chicago, Ill.; Hutchinson Merchandise Warehouse, Inc., Hutchinson, Kan.; Ben Deike Transfer & Storage, Inc., Mankato, Minn.; Pettit's Storage Warehouse Co., Ft. Wayne, Ind., and Colonial Warehouse, Minneapolis, Minn.

Warehouse Briefs

Merchants Refrigerating Co., New York, N. Y., has announced construction of a 1.3 million-cu-ft refrigerated warehouse in Vinita Park, Mo.

Lyon Van & Storage Co. has opened a new 21,000-sq-ft warehouse at 7915 Sepulveda Blvd., in Los Angeles, Calif., and has a new office and warehouse under construction in Belmont, Calif., south of San Francisco.

Ingle Transfer & Storage Co., Asheville, N. C., has added a 100x120-ft section to its warehouse.

Fargo Moving & Storage, Inc., Miami, Fla., has added two new warehouses, with a total of 25,000 sq ft, to its operation.

Smith's Transfer & Storage Co., Inc., Washington, D. C., has added another warehouse to its string (the fifth) bringing Smith's total storage space to 1.6 million cu ft.

Hartford Freezer Corp., in East Hartford, Conn., has under construction a 1-million cu ft freezer plant. The one-floor building is served by a 10-car siding in the NYNH&H.

Talley Transfer & Storage Co., San Antonio, Tex., has been admitted to membership in the AWA Merchandise Div. **Lehigh Warehouse & Transportation Co.,** Newark, N. J., has identified its Atlanta, Ga., operation with the same group.

John Mercer Warehouse Co., is the new name of the former **Mercer-Fussell Storage Co.,** in Miami, Fla. The firm also moved into a new 100,000-sq-ft warehouse on Sept. 1.

Pure Ice & Cold Storage Co., Dallas, Tex., has added 150,000 cu ft of freezer and cooler space.

Florida Warehouse Corp., Jacksonville, Fla., has applied for membership in NARW.

—DA—

The New York State Warehousemen's Assn. conducted its annual Friendly Convention Aug. 24-28, at Saranac Lake.

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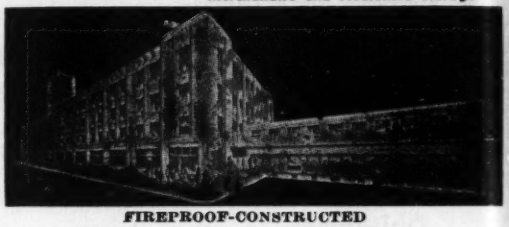

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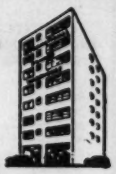

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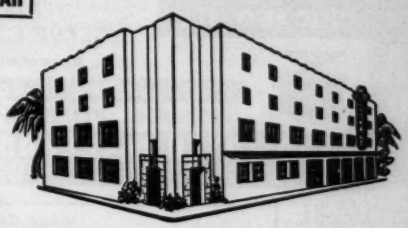

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Willie Works Wonders . . .

(Continued from Page 41)

tures of Willie, were facts and demonstrations of correct materials handling methods. Produced in full color, backed with recordings, including music, occasional jokes and pin-up pictures, the visual training production apparently appealed to the employees.

Many of Willie's production-line mistakes were recognized as poor materials handling practices which were taking place in the plant. Willie now is mentioned along every production line. Every time someone pulls a boner, he's called "Willie" by his fellow workers.

Personnel Training

Manufacturing employees are indoctrinated in preferred handling methods in training dept. classroom groups of 25 to 30. Although time is of the utmost importance, the classes are kept small enough so that a question and answer discussion follows each showing of the visual training production. The overall program takes six months. All employees attend the classes on company time, leaving their jobs on the production lines for as long as an hour and a half.

In addition to the film slides, Bell instructors, at the beginning of each instruction period, impress upon their listeners the importance of keeping materials handling damages at a minimum. It is explained that in a competitive business costs must be kept low. The employees are advised how they are insuring their jobs by endeavoring to keep costs down.

Employees are shown an exhibit of parts damaged through careless handling, and also what household appliances could have been purchased with the amount of money invested in the scrapped parts. When an employee realizes that a part he handles is as valuable as his new automobile, he becomes more handling conscious.

In addition to the general course for manufacturing employees, special courses were prepared for personnel in other sections. The courses were designed on the basis of an investigation which showed that while one thinks of the Traffic Dept. in relation to materials handling, much of the damage is caused by employees handling parts in other departments.

While the lack of proper education of employees was responsible for most damage to materials in the helicopter division, there also were physical shortcomings. Authorities learned that employees did not properly pack or package parts before moving them for the reason that proper boxes were not available when needed. A new department, Preservation and Packaging, was established, being given the responsibility of setting up specifications, procedures, coordinating the flow of boxes and containers, and the designing of special containers for shipping and handling parts. A study of all parts was made, and special boxes were built to insure their safe handling.

General housekeeping left much to be desired. Too often aisles became cluttered, trash was dropped in materials containers, and parts and tool chests were precariously stacked. To meet this contingency, an inspection team made up of two representatives of the Facilities Coordination section and two invited department foremen make general inspections of all plant facilities. Arriving unannounced, the inspection team inspects every department, listing everything that is not in order. Signs are posted in each department identifying it as either a clean department or a poor one. The signs remain up for all personnel to observe. Improvement in conditions has greatly increased.•

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PENNSYLVANIA
WAREHOUSING & SAFE DEPOSIT COMPANY
303 Chestnut Street • Philadelphia 6

. . . the Law

(Continued from Page 82)

and packed in bags, and that it was ready for delivery. However, the purchaser failed to pick up and take delivery of the merchandise and within a reasonable period of time without fault of the seller the merchandise was destroyed by fire.

In subsequent litigation, the seller contended that he was holding the merchandise for the purchaser, while waiting for the latter to take delivery, and for this reason the purchaser was solely liable for full payment for the destroyed merchandise. During the trial the purchaser proved that the contract specified that shipment was to be fob the seller's location.

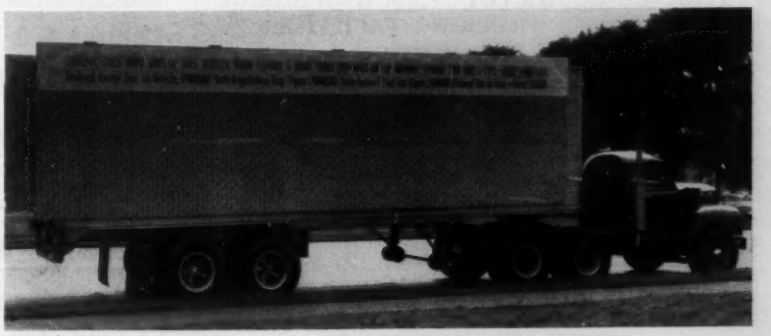
Under ordinary circumstances the title to goods shipped fob the seller's location remains with the seller until the shipment is made. However, in this particular instance, as above stated, the sale was made under an agreement that the seller would pack the merchandise before shipment. This the seller did and although the work of cleaning the merchandise and packing it in bags was completed to knowledge of the purchaser, the latter failed to order the seller to ship the merchandise to him.

Under these circumstances the higher court decided that title to the merchandise had passed to the purchaser who must suffer the loss, and pay the seller the full contract price for the destroyed merchandise. The court said:

"All of the cleaning and packing had been done and the appellant (purchaser) was notified that appellee (seller) had fully performed the contract and the merchandise was ready for delivery. If appellant (purchaser) did not send out its trucks and get the merchandise within a reasonable time, title had passed and the merchandise was left where it was by appellant (purchaser) and at its own risk. Any loss consequent on its so doing would be its loss and not that of appellee (seller)."

Therefore, in view of this late and leading higher court decision, the law is established that if a purchaser fails to take delivery of purchased merchandise on the date specified in the sale contract, or immediately on notification from the seller if the contract does not specify the delivery date, the purchaser is liable for loss, theft, damage or destruction of the merchandise while in custody of the seller. This is so although the contract specified delivery of the merchandise fob the seller's location.

(Resume Reading on Page 83)



Exercising the right to petition Congress, which is considering special tax levies on the new highway program, this trailer plastered with dollar bills was prepared by the ATA to show the tax load now being carried by the typical big truck. The $4,480 represents the present tax burden on this size vehicle

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Letters to the Editor . . .

(Continued from Page 8)

me as the most important is where can you find a driver to go 1,105 miles, wait for loading and unloading and evidently lay over away from home for $101.33 plus $16 layover. I would be very much interested in hiring a few competent drivers at these wages. According to our present wage scale, making no allowance for breakdowns, etc., we must pay a driver $160.35 plus the fringe benefits.

In the instance you are referring to, this may not be true, but it also is possible, and from my experience quite probable, that the over-the-road driver is unable to unload in Baltimore and Philadelphia and must put on local city men. The minimum in both cities is eight hours, and I believe this totals something like $19.28 per day. These are all extra costs that happen daily that you have not taken into consideration.

Donald C. Andrus,
Traffic Manager
Northern Haulers Corp.
Watertown, N. Y.

To The Editor:

I enjoyed the well-written article by James J. Walsh in your August edition but find numerous points of criticism in Tables I and II which accompany it. I take it that most of this is speculation, but it does tend to create what may be an improper comparison at least to the extent of the measure of any advantage there might be in private carriage.

The first criticism lies in the failure to include in Table II the cost of such unloading and loading as is performed by the Brooklyn plant and the omission of any cost for supervision of the trucking operation.

Table II uses 10¢ per mile for gas, oil, maintenance and tires. Our own cost is very nearly 15¢, and I cannot conceive a shipper being able to better our costs to such great extent.

Table I indicates the driver is allowed only nine hours per week for such loading and unloading as he is required to perform although the handling weight is 181,000 lb, or an average of about 21,000 lb per hour. There is some inconsistency here in that only one hour is allowed for loading 24,000 lb at Salem and the same 24,000 lb must be unloaded at Brooklyn in 45 minutes. I doubt whether one of our own drivers could unload one of these loads in less than three hours time and somewhat greater time would be required for the loading operation. This suggests that the driver is being given assistance in loading and unloading, the cost of which is not included in Table II.

Table I indicates driving time of 36½ hours is allowed for the distance of 1,105 miles or an average of 30 miles per hour. This is a rather fast schedule and makes little allowance for delays due to road, traffic, weather, and other conditions. We consider a scheduled average of 25 miles per hour on these short hauls as more practical.

An arrangement of this kind calls for precise timing on the part of two shippers and two consignees. Furthermore, the assembly of ltl shipments at the Brooklyn plant could involve additional costs not included in the proposed costs listed in Table II.

Last, but not least, it should be pointed out the rates used to Baltimore and Philadelphia in Part A of Table II can be reduced if the weight is increased to 28,000 lb per load, resulting in rates of 49¢ to Baltimore and 34¢ to Philadelphia.

I am not attempting to draw any conclusions, excepting to point out that the correct "Cost Reduction Per Week" would be substantially less than the figure of $217.73 shown in Part B of Table II.

Thomas B. Harvey,
Traffic Manager
Continental Transportation Lines, Inc.
Pittsburgh, Pa.

The tables published with the article were included to illustrate methods and procedures for a "private carriage" analysis, rather than specific dollars-and-cents costs. We agree that in the New York-Baltimore area present driver wage rates are higher than the hourly rate in Table II (particularly with the substantial increases in union contracts negotiated late in 1954 and 1955).

Through oversight, Table I did not include a statement that the entire northbound movement of glass bottles and a substantial part of the southbound movement of finished goods would be handled on pallets. Loading and unloading times in the table were constructed on this assumption and, obviously, more time would have to be allowed if freight were handled on and off truck "piece-by-piece."

We emphasize again that anyone contemplating vehicle operations should collect his own cost data. The article's purpose was to suggest ways that this may be done, not the figures to be used.—James J. Walsh, Traffic Manager, The Mennen Co.

(Resume Reading on Page 13)

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Men in the News

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Alexander L. Naylor—elected president, The Fairbanks Co., New York.

Leon J. Pantas—elected a vice president, The Yale & Towne Mfg. Co. He will continue as general manager, Yale Lock and Hardware Div.

Stevens H. Hammond — re-elected chairman of the board, Whiting Corp., Harvey, Ill. — **J. A. Handley** — re-elected, president.

William D. Black — named sales manager, Automatic Transportation Co., Chicago, Ill.

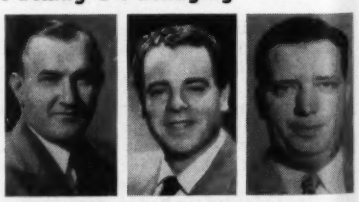
Gwilym A. Price—elected chairman and president, Westinghouse Electric.

L. A. Sutton—appointed general manager, Magcoa Limited, Toronto, Canada. This is a subsidiary of Magnesium Co. of America.

Norman A. Price — named vice president and director, Colson Corp., Elyria, Ohio. He retains his position as director of sales.

Frank Breckenridge—named vp in charge of engineering and mfg. opr., Globe Hoist Co., Phila., Pa.

Packing & Packaging



H. S. Kubes (left)—named exec vp; **A. R. Caputo** (center); and **G. E. Maxfield**—elected board directors, The American Box Co., Cleveland, Ohio.

(Resume Reading on Page 23)